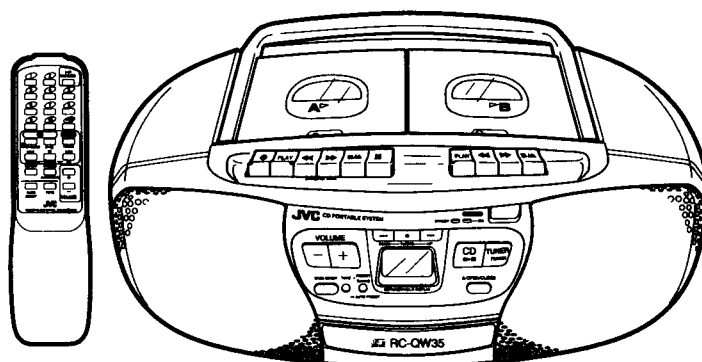


JVC

SERVICE MANUAL

CD PORTABLE SYSTEM

RC-QW35BK_{B/E/EN/G}



RC-QW35

COMPACT
disc
DIGITAL AUDIO

Area Suffix

B U.K.
E Continental Europe
EN Northern Europe
G Germany




■ Self diagnosis function

This model has a convenient self-diagnosis function CD section.

Contents

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■ Instructions	5	7. Standard Schematic Diagrams	42
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■ Safety Precautions

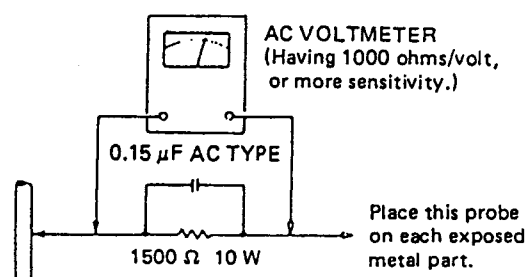
1. The design this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacture's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety — related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of service manual. Electrical components having such features are identified by shading () and () on the schematic diagram and by () on the parts list in the service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after reassembling.
5. Leakage current check (Electrical shock hazard testing)

After re — assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. using a "Leakage current tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC(r.m.s.)

- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 ohms 10W resistor paralleled by a 0.15 μ F AC type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC(r.m.s.). This corresponds to 0.5mA AC(r.m.s.).



◆ Warning (UK only)

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

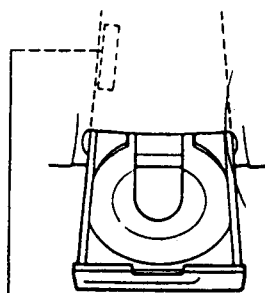
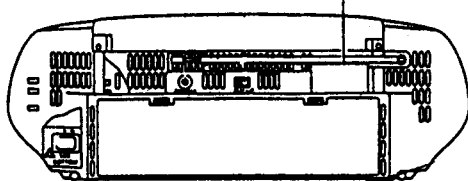
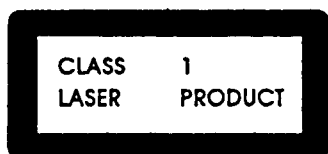
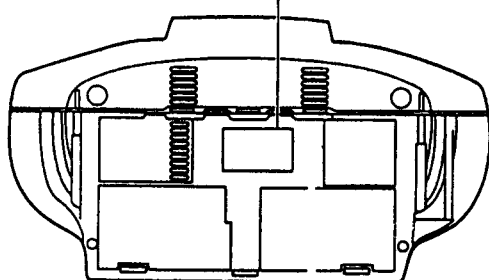
Safety Precautions

IMPORTANT FOR LASER PRODUCTS

PRECAUTIONS

1. CLASS 1 LASER PRODUCT
2. **DANGER:** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION:** Do not open the rear cover. There are no user serviceable parts inside the unit; leave all servicing to qualified service personnel.
4. **CAUTION:** The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent the emission of radiation when the CD tray is open. It is dangerous to defeat the safety switches.
5. **CAUTION:** Use of controls for adjustments and the performance of procedures other than those specified herein may result in exposure to hazardous radiation.

Name/Rating plate



DANGER: Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)	ADVARSEL: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (d)	VARNING: Osynlig laserstråling når denne del är öppnad och spåren är urkopplad. Beträkta ej strålen. (s)	VARO: Avattessa ja suojakäytös ohitettessa plet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)
---	---	---	--

ADVERSEL: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS: Varmuuskäytöksen ollessa pois päältä kun laite avataan, siellä kehittyy näkymättömiä lasersäteitä. Älä pane itseäsi säteilyn alttiiksi.

VARNING: Osynlig laserstråling uppstår vid komponentens öppning när säkerhetsbrytaren är frånslagen.

ADVARSEL: Usynlig laserstråling ved åbning når sikkerhedsbryteren er ude af funktion. Undgå udsættelse for stråling.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT (In the United Kingdom) Mains Supply (AC 230 V ~, 50 Hz only)

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

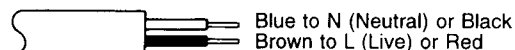
BE SURE to replace the fuse only with an identical approved type, as originally fitted and to replace the fuse cover.

If nonetheless the mains plug is cut off ensure to remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

IMPORTANT

DO NOT make any connection to the terminal which is marked with the letter E or by the safety earth symbol or coloured green or green-and-yellow.

The wires in the mains lead on this product are coloured in accordance with the following code:



As these colours may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

IF IN DOUBT-CONSULT A COMPETENT ELECTRICIAN.

■ Safety precaution about RC-QW35

1. Check the power transformer marking, and check that the power transformer is securely installed.

Parts number: V-2409T-B

2. Check the power cord marking, and check that the power cord is not externally damaged.

	B VERSION	E/G/GI/EN VERSION
Cord mark:	BS6500	△ VDE ▽
Attachment plug:	ASTABEF179	KP-419C
Connect plug:	M1250A	KS-15E

3. Check the AC socket marking, and check that the AC socket is tightly fixed in the P.C.board when installed. HSC1466.

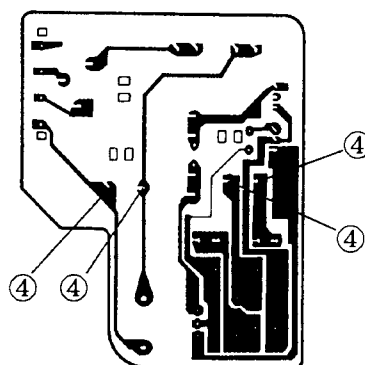
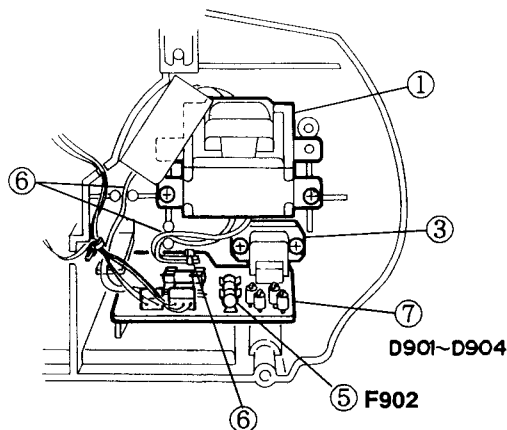
4. Check that there is sufficient space for the primary and adjacent secondary terminal parts on the P.C.board (There should be no protrusions of solder or terminal wires.)

5. Check the rated fuse display, and check that the fuse is secure in the fuse holder. F902 P: T2.5 A / 250 V

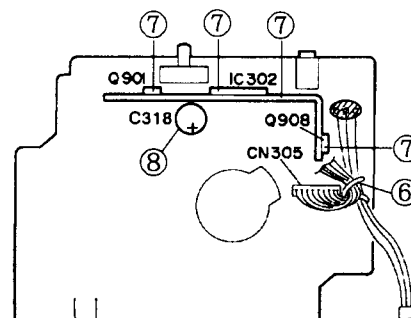
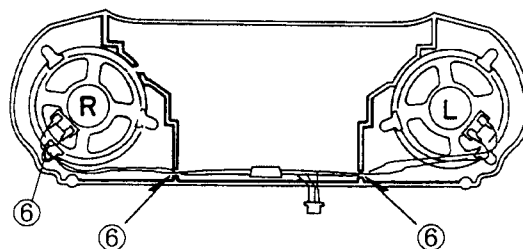
6. Check that the wires are neatly arranged so that they do not interfere with sections involving power, moving parts, heat generation, or those with sharp-edged parts.

7. The following parts are important for safety in such operations as those involved with heat generation. Use the specified parts and check original shape. Heat generating parts should be suspended above the P.C.board not fallen down. Parts marked with are safety control parts.

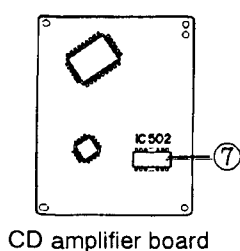
IC302, HEAT SINK, D901, D902, D903, D904, Q901,
Q908, Q906, IC502, R122, R222,



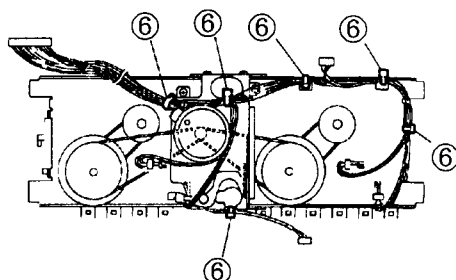
Power supply board



Main board



CD amplifier board



JVC

CD PORTABLE SYSTEM

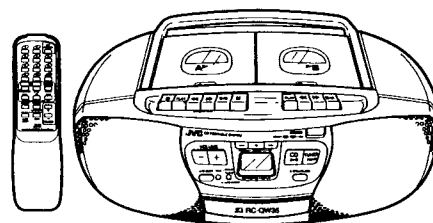
RC-QW35/QS22 B

RC-QW35/QS22B

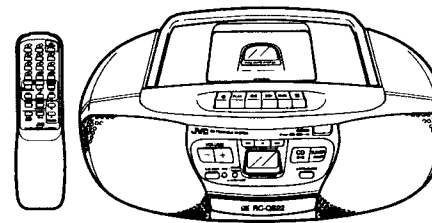
CD PORTABLE SYSTEM

JVC
VICTOR COMPANY OF JAPAN, LIMITED

COMPACT
disc
DIGITAL AUDIO



RC-QW35



RC-QS22

INSTRUCTIONS

Printed in Hong Kong
VNN 5197-671C

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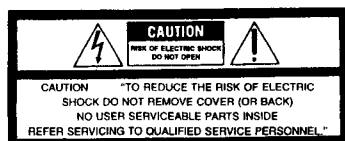
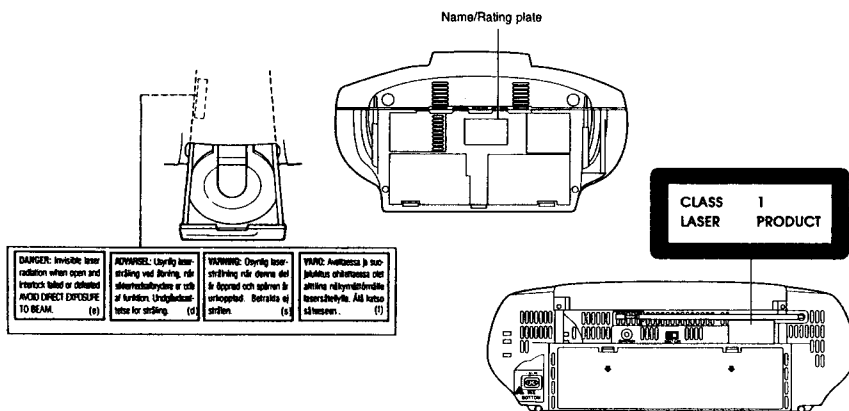
Thank you for purchasing this JVC product. Please read these instructions carefully before starting operation to be sure to obtain optimum performance and a longer service life from the unit.

CONTENTS

Features	3
Safety precautions	3
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WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

REPRODUCTION OF LABELS AND THEIR LOCATION



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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- CAUTION:** The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent the emission of radiation when the CD tray is open. It is dangerous to defeat the safety switches.
- CAUTION:** Use of controls for adjustments and the performance of procedures other than those specified herein may result in exposure to hazardous radiation.

IMPORTANT (In the United Kingdom) Mains Supply (AC 230 V ~, 50 Hz only)

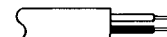
DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

BE SURE to replace the fuse only with an identical approved type, as originally fitted and to replace the fuse cover. If nonetheless the mains plug is cut off ensure to remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

IMPORTANT

DO NOT make any connection to the terminal which is marked with the letter E or by the safety earth symbol or coloured green or green-and-yellow.

The wires in the mains lead on this product are coloured in accordance with the following code:



Blue to N (Neutral) or Black
Brown to L (Live) or Red

As these colours may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

IF IN DOUBT-CONSULT A COMPETENT ELECTRICIAN.

FEATURES

- One-touch operation (COMPU PLAY) (only when AC power is used)**
 - When a source button (CD, tape, or tuner) is pressed, the unit's power is turned on and initiates playback even when the power is set to **STANDBY**.
- 24-key remote control unit opens and closes the motor-driven CD tray and operates the usual CD and tuner functions**
 - The remote control controls power ON/OFF switching, volume control, tone control and Bass Boost ON/OFF switching.
- Double cassette mechanism (Deck A for recording and playback, Deck B for playback) (RC-QW35)**
 - Synchro-start dubbing function.
 - Relay playback (from Deck B to Deck A).
- Single cassette mechanism (RC-QS22)**
 - 2-Band digital synthesizer tuner with 30-station (15 FM and 15 AM) preset capability
 - Auto preset tuning.
- Bass Boost button for low-frequency sound reproduction**
- Beat Cut switch**

SAFETY PRECAUTIONS

Prevention of Electric Shocks, Fire Hazards and Damage

- Even when the **POWER** button is set to **STANDBY**, a very small current will flow. To save power and for safety when not using the unit for an extended period of time, disconnect the power cord from the household AC outlet.
- Do not handle the power cord with wet hands.
- When unplugging from the wall outlet, always grasp and pull the plug, not the power cord.
- Consult your nearest dealer when damage, disconnection, or contact failure is found with the cord.
- Do not bend the cord sharply or pull or twist it.
- Do not modify the power cord in any manner.
- Do not remove screws to disassemble the unit and do not touch anything inside the unit to avoid accidents.
- Do not insert any metallic objects into the unit.
- Unplug the power cord when there is a possibility of lightning.
- If water gets inside the unit, unplug the power cord from the outlet and consult your dealer.
- Do not block the ventilation holes of the unit so that heat can escape.
- Do not install the unit in a badly ventilated place.
- Since the RC-QW35/QS22 uses a motor-driven CD tray, make sure your hand or other object does not obstruct tray movement.

Power button

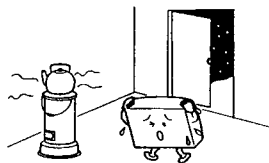
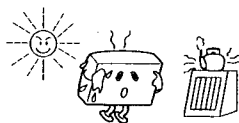
When the power cord is connected to a household AC outlet, the power indicator is lit red, indicating **STANDBY** mode (this indicator does not light when DC power is supplied). When the power is switched on, the indicator turns green showing that the power is on (this indicator lights with both AC and DC power supplies).

When this unit is plugged into an AC outlet, it consumes a small current to operate the remote control, or to back up the memory of the microprocessor, even when the **POWER** button is set to **STANDBY**.

HANDLING PRECAUTIONS

Do not use this unit in direct sunlight or leave the unit in closed automobiles (or yachts, etc.) where it would be exposed to high temperatures above 40°C.

- Avoid installing in the following places.**
 - Where it could be subject to vibrations.
 - Where it is excessively humid, such as in a bathroom.
 - Where it could be magnetized by a magnet or speaker.
- Pay attention to dust.**
Be sure to close the CD tray so that dust does not collect on the lens.
- Condensation**
In the following cases, condensation may occur in the unit, in which case the unit may not operate correctly.
 - In a room where a heater has just been switched on.
 - In a place where there is smoke or high humidity.
 - When the unit is moved directly from a cold to a warm room.
 In these cases, set the POWER button to ON and wait 1 or 2 hours before use.
- Volume setting**
Compact discs produce very little noise compared with analog records. When the volume control of an amplifier is adjusted by listening to the noise as is done with analog records, the speakers could be damaged by the sudden increase of output when the music starts. Therefore, turn down the volume before starting and adjust as required while playing a CD.



POWER SUPPLY

A. Operation on household AC

- Connect the AC power cord.

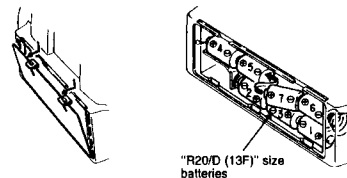
CAUTIONS:

- ONLY USE WITH JVC POWER CORD PROVIDED WITH THIS UNIT TO AVOID MALFUNCTION OR DAMAGE TO THE UNIT. REMOVE BATTERIES WHEN USING THE POWER CORD.**
- BE SURE TO UNPLUG THE POWER CORD FROM THE OUTLET WHEN GOING OUT OR WHEN THE UNIT IS NOT IN USE FOR AN EXTENDED PERIOD OF TIME.**

B. Operation on batteries

Loading batteries

- Open the battery cover by pulling it toward you while pressing the sections marked by the arrows.
- Insert seven "R20/D (13F)" size batteries as shown in the diagram.
 - Be careful to insert the batteries with the ⊕ and ⊖ terminals positioned correctly.
- Replace the cover.



"R20/D (13F)" size batteries

Checking batteries

When the tape speed or output sound decreases, or CD playback is intermittent, replace all batteries with fresh ones. When making an important recording, use new batteries (preferably alkaline batteries with a longer service life) to avoid any possible failure.

- For better battery usage
Continuous operation of the unit causes the battery power to be consumed quicker than noncontinuous operation. Operation of the unit in a cold place causes the battery power to be consumed more quickly than in a warm place.

CAUTIONS:

- WHEN NOT USING THE UNIT FOR A LONG TIME (MORE THAN TWO WEEKS) OR WHEN ALWAYS USING HOUSEHOLD AC, REMOVE THE BATTERIES TO AVOID A MALFUNCTION OR DAMAGE TO THE UNIT.**
- WHEN THE JVC POWER CORD PROVIDED WITH THIS UNIT IS CONNECTED, THE POWER IS AUTOMATICALLY SWITCHED FROM THE BATTERIES TO THE HOUSEHOLD AC EVEN WHEN THE BATTERIES ARE LOADED. HOWEVER, REMOVE THE BATTERIES WHEN USING THE POWER CORD.**

CAUTIONS WHEN USING BATTERIES:

When batteries are used incorrectly, it may result in the leakage of chemicals from the batteries or they may explode.

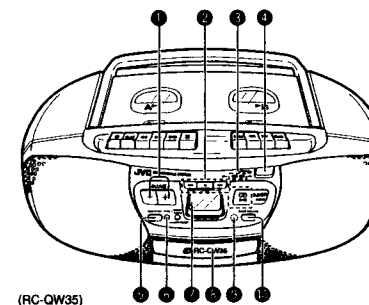
The following care should be taken:

- Check that the positive ⊕ and negative ⊖ terminals of the batteries are positioned correctly and load them as shown in the diagram.
- Do not mix new and old batteries together, or mix different types of batteries.
- Do not try to recharge non-rechargeable batteries.
- Remove the batteries when the unit is not to be used for an extended period of time.

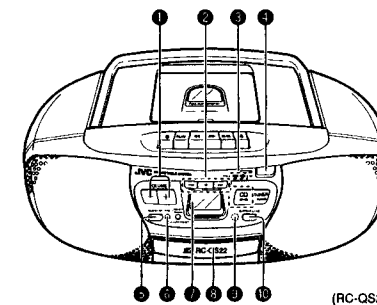
If chemicals from the batteries come in contact with your skin, wash them off immediately with water. If chemicals leak onto the unit, clean the unit completely.

NAMES OF PARTS AND THEIR FUNCTIONS

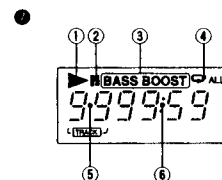
CD player/General section



(RC-QW35)

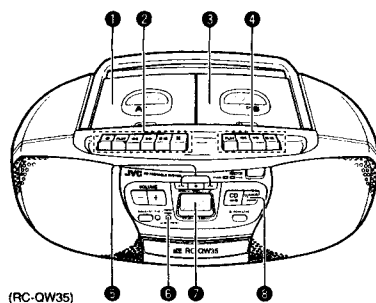


(RC-QS22)

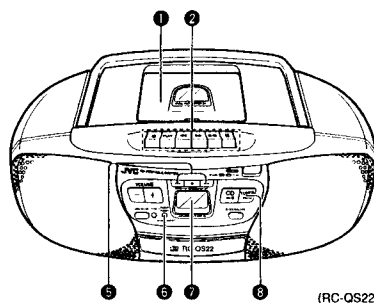


- VOLUME buttons
- CD operation buttons
 - Search buttons (◀▶)
 - Stop/clear button (■)
 - Play/pause button (⏸)
- POWER indicators
 - GREEN: POWER ON
 - RED: STANDBY
- POWER button
- BASS BOOST button
- REPEAT button
- Display window
 - ① Playback indicator (▶)
 - ② Pause indicator (⏸)
 - ③ BASS BOOST indicator (BASS BOOST)
 - ④ Repeat playback indicator (⏮)
 - ⑤ Track number display
 - ⑥ Playback time display
- CD tray
- Remote sensor section
- CD tray open/close button (⏏ OPEN/CLOSE)

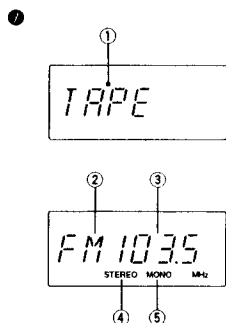
Deck/Tuner section



(RC-QW35)

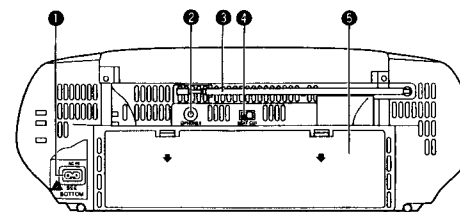


(RC-QS22)



- 1 Cassette holder (Deck A) (RC-QW35)
Cassette holder (RC-QS22)
- 2 Cassette operation buttons (from left to right)
 - REC : Press this button with PLAY/TAPE button to start recording.
 - ▶▶ : Press to play the tape.
 - ◀◀ : Press to rewind the tape rapidly.
 - ▶▶ : Press to wind the tape forward rapidly.
- STOP/EJECT : Press to stop the tape. Pressing this button when the tape has stopped opens the cassette holder.
- PAUSE : Press to stop the tape momentarily. Press again to release the pause mode.
- 3 Cassette holder (Deck B) (RC-QW35)
- 4 Cassette operation buttons (from left to right) (RC-QW35)
 - ▶▶ : Press to play the tape.
 - ◀◀ : Press to rewind the tape rapidly.
 - ▶▶ : Press to wind the tape forward rapidly.
- STOP/EJECT : Press to stop the tape. Pressing this button when the tape has stopped opens the cassette holder.
- 5 TUNING buttons (UP/DOWN)
- 6 PRESET TUNING (●) button
AUTO PRESET (—) button
- 7 Display window
 - 1 Tape mode display
 - 2 Band indicator (FM/AM)
 - 3 Radio frequency display
Preset station display
 - 4 STEREO indicator
 - 5 MONO indicator
- 8 TUNER (FM/AM) button
Press to select TUNER mode.
Press to select the band (FM/AM).

Rear panel



- 1 AC IN (AC input) jack
- 2 Headphones jack (PHONES) (3.5 mm dia. stereo mini)
Connect headphones (with impedance 16 Ω – 1 kΩ) to this jack. The speakers are automatically switched off when the headphones are connected.
- 3 Telescopic antenna
- 4 BEAT CUT switch
- 5 Battery compartment cover

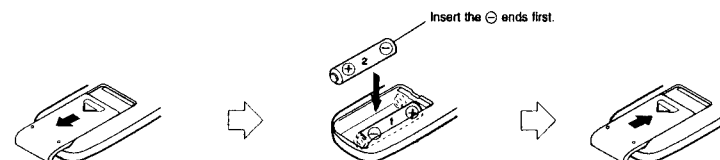
REMOTE CONTROL UNIT

Preparation before use

- Installing batteries in the remote control unit
 1. Remove the battery cover from the back of the remote control unit.
 2. Insert two "R6/AA (15F)" size batteries.
 - Insert the batteries with the ⊕ and ⊖ terminals matching the indication inside the battery compartment.
 3. Replace the cover.

Battery replacement

When the remote control operation becomes unstable or the distance from which remote control is possible becomes shorter, replace the batteries with new ones.



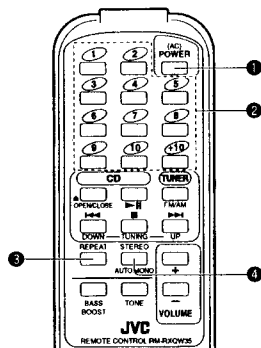
Using the remote control unit

To use the remote control unit, point it at the remote sensor section and press the buttons gently and firmly. Remote control operation is possible within about 7 m (approx. 23 ft). However, since the remote control range is less when the unit is used at an angle, use directly in front of the remote sensor section, as far much possible.

Do not expose the remote sensor section to strong light (direct sunlight or artificial lighting) and make sure that there are no obstacles between the remote sensor section and the remote control unit.

The following operations can be performed using the remote control unit.

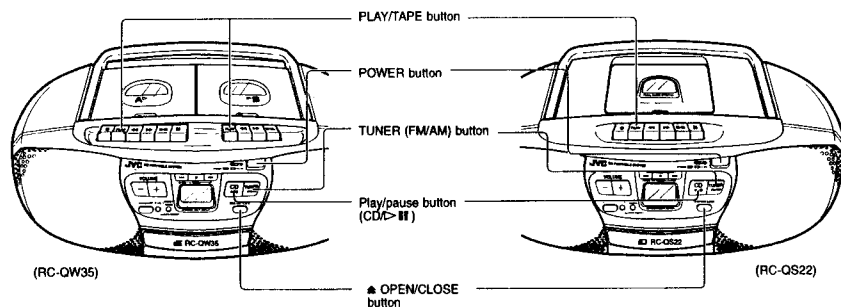
- Check the functions of the operation buttons carefully and operate them correctly.



- POWER (AC) button**
 - When power is supplied from the batteries, even when the button is pressed, the RC-QW35/OS22 will not be switched on. Switch on the POWER button of the main unit first, then perform operations.
- Track (tune) number buttons (No. 1 to No. 10, +10)**
Preset station buttons (No. 1 to No. 10, +10)
- CD operation**
REPEAT : Repeat playback button
- TUNER operation**
STEREO
AUTO/MONO : To select FM mode.

Note:
When running the main unit on batteries, operate after switching on the main unit POWER button.

SWITCHING THE POWER ON/OFF



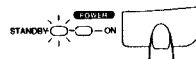
Switching the power on/off

- Switching on:



The green indicator lights.

- Switching off:



The red indicator lights. (The indicator does not light when DC power is supplied.)

COMPU PLAY (only when AC power is used)

Even when the power is set to STANDBY, pressing the button shown below switches on the power and selects the source.

	Function mode	Operations
	CD	When this button is pressed with a CD loaded, CD playback begins.
(RC-QW35) 	TAPE	When this button is pressed with a tape loaded, tape playback begins.
(RC-QS22) 		
	TUNER	When this button is pressed, the tuner is engaged.

- When the CD tray Open/close (▲ OPEN/CLOSE) button is pressed, the source sound does not switch over, the CD tray can open or close.

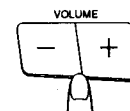
Notes:

- When switching off the power, be sure to press the POWER button. (When the POWER is switched off with the CD tray open, the CD tray is closed and then the power is switched off.)
- Position the front panel away from you when carrying this unit to avoid accidentally pressing the POWER button.

VOLUME AND TONE BUTTONS

VOLUME buttons

+ : Use to increase the volume.
- : Use to decrease the volume.
(control range from VOL 0 to VOL 25.)



TONE button

To set the tone level, press this button and adjust using the VOLUME buttons. The level setting ranges are from -6 to 6.



CONCERNING COMPACT DISCS

Since dirty, damaged and warped discs may damage the unit, care should be taken of the following:

1. Usable compact discs

Use compact discs with the mark shown.

2. Notes on handling discs

- Do not touch the reflective recorded surface.
- Do not stick anything to or write anything on the label side.
- Do not bend compact discs.

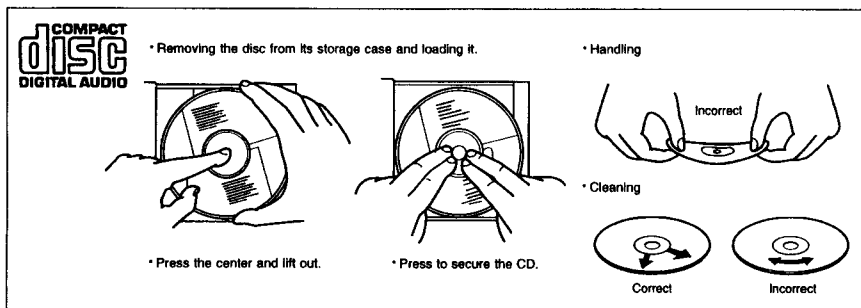
3. Storage

- After removing a disc from the unit, be sure to put it back in its case.
- Do not expose discs to direct sunlight, high temperatures from a heater, etc., high humidity, or dust.

4. Cleaning discs

Before loading a disc, wipe off any dust, dirt or fingerprints with a soft cloth. Discs should be cleaned by wiping radially, from the center to the edge.

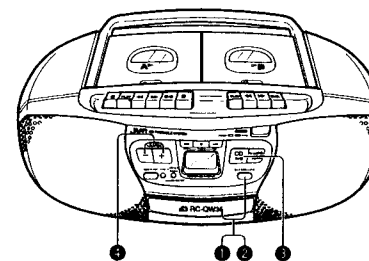
- **Never use thinner, benzine, record cleaner or antistatic spray.**



PLAYING COMPACT DISCS

Playing an entire disc ... The following example assumes a compact disc with 12 tunes and a total playing time of 48 minutes 57 seconds.

Operate in the order shown.



- Press to open the CD tray. (The power is switched ON when AC power is supplied.)
 - When battery power is used, switch on the POWER button first, then perform operations.
- Load a disc with the label side facing up. Press to close the CD tray. (The tray can be closed by pressing the CD/> button.)
- Press to start play.
- Adjust.

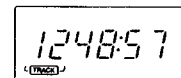
- 8-cm compact discs can be used in this unit without an adapter.

Note:

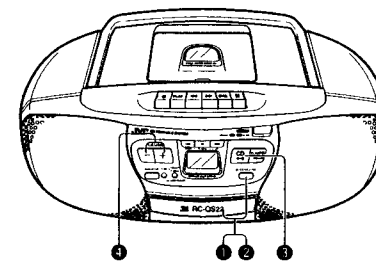
When the CD tray is closed by pressing the CD/> button, the CD starts playing as soon as the tray is closed.

To stop play

- **To stop in the middle of a disc**
During playback, press the /clear button to stop play.



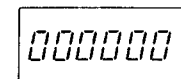
- The total number of tracks (tunes) and total playing time are displayed.



- **To stop a disc temporarily**
Press the CD/> button to stop play temporarily. When pressed again, play resumes from the point where it was paused.

Notes:

- The following indication may be shown when a disc is dirty or scratched, or when the disc is loaded upside down. In such a case, check the disc and insert again after cleaning the disc or turning it over.
- When a CD is not loaded in the tray or when "000000" is displayed, the CD tray opens when the CD/> button is pressed.



- Do not use the unit at excessive high or cold temperatures. The recommended temperature range is from 5°C (41°F) to 35°C (95°F).
- After playback, unload the disc and close the CD tray.
- If mistracking occurs during play, lower the volume.
- Mistracking may occur if a strong shock is applied to the unit or if it is used in a place subject to vibrations (i.e. in a car travelling on a rough road).

Skip playback

- During playback, it is possible to skip forward to the beginning of the next tune or back to the beginning of the tune being played or the previous tune; when the beginning of the required tune has been located, play starts automatically.

To listen to the next tune ...

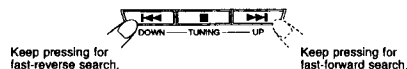
Press the button once to skip to the beginning of the next tune.

To listen to the previous tune ...

Press the button to skip to the beginning of the tune being played back and press again to skip to the beginning of the previous tune.

Search playback (to locate the required position on the disc)

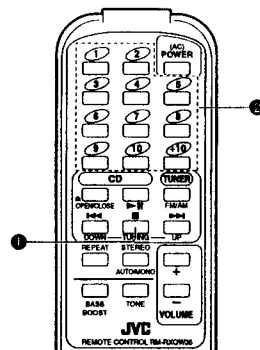
- The required position can be located using fast-forward or reverse search while playing a disc.



- Hold down the button; search play starts slowly and then gradually increases in speed.
- Since low-volume sound (at about one quarter of the normal level) can be heard in the search mode, monitor the sound and release the button when the required position is located.

Direct access playback (using the remote control)

- Pressing any of the track number buttons will start play from the beginning of the designated tune, without your having to press the CD button.
- Press the button to set to the CD mode.
- Designate the required tune using the track number buttons.
 - To designate tune numbers 1 to 10, press the track number button corresponding to the tune (track) number.
 - To designate tune number 11 or higher, press the +10 button the required number of times, then the track number button. (Example: To designate the 20th tune, press the +10 button once, then press track number 10.)
- +10 button: Each time this button is pressed, the number increases by 10. First press this button to set the 10's digit, then press the track number button to set the 1's digit.
- To skip to another tune during play: When the required track number buttons is pressed, the display shows the designated track number and play starts from the beginning of the designated tune.



Repeat play (using the remote control)

Press the REPEAT button before or during play. A single tune or all the tunes can be repeated.

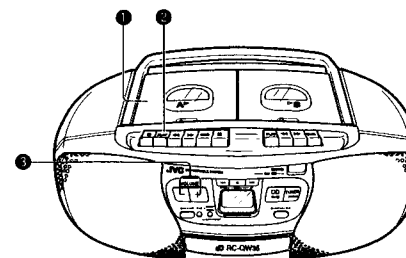
Whether a single tune or all tunes are to be repeated can be specified. Each time the REPEAT button is pressed, the mode will change from a single tune (ALL), to all the tunes (ALL), to the clear mode, in this order.



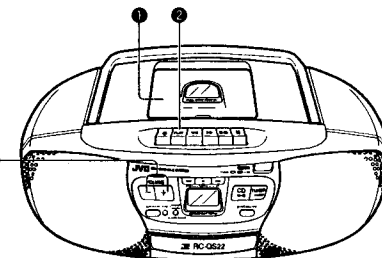
- Repeat playback of a single tune (ALL) The tune being played back will be heard repeatedly.
- Repeat playback of all tunes (ALL) When playing back an entire disc, all tunes will be heard repeatedly.

CASSETTE PLAYBACK

Operate in the order shown.



(RC-QW35)



(RC-QS22)

- Load a cassette tape.
 - Press to start playback. (The power is switched on, TAPE mode is engaged and tape playback starts.)
 - When battery power is used, switch on the POWER button first, then perform operations.
 - Adjust.
- Playback in Deck B (RC-QW35 only)
The previous procedures also apply to Deck B when a cassette is loaded in Deck B. When Decks A and B are simultaneously set to the play mode, only the playback sound of Deck B is heard.

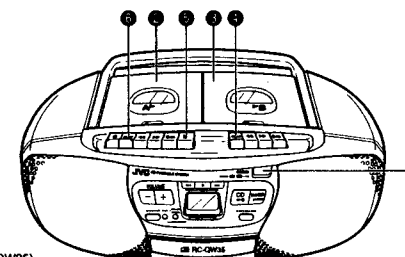
Notes:

- When the power is turned off while the tape is still running, cassette operation buttons which are depressed do not return to the original positions. Press the STOP/EJECT button to stop the tape running before turning off the power.
- Avoid operating the or button on the deck during playback of the other deck. (RC-QW35)

RELAY PLAYBACK (RC-QW35 ONLY)

(From Deck B to Deck A)

Operate in the order shown.



(RC-QW35)

- Set the POWER button to ON.
- Load a cassette.
- Load a cassette.
- Press the PLAY/TAPE button on Deck B.
- Press the PAUSE button.
- Press the PLAY/TAPE button on Deck A.

- When Deck B stops, Deck A's pause mode will be released and it will start playback. When Deck A stops automatically, relay playback will be released.

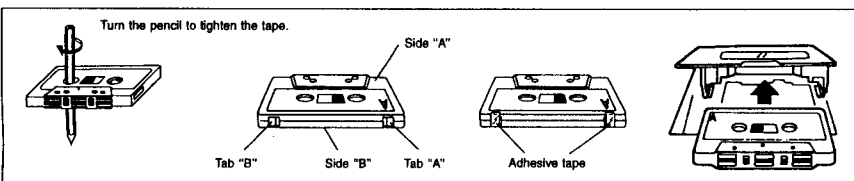
CASSETTE TAPE

Cassette tape

- Loose tape may cause trouble. With a pencil, gently tighten the tape as shown.
- To prevent recordings from being erased accidentally, remove the tab(s) with a screwdriver. Reseal the slots with adhesive tape to erase and re-record after the tabs have been broken off.

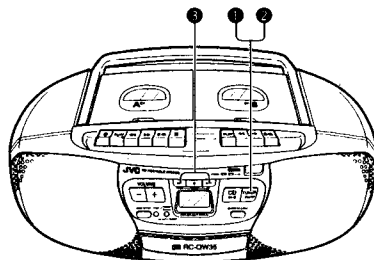
Cassette loading

- Press the STOP/EJECT button to open the cassette holder.
- Load a cassette as shown.
- Close the cassette holder by pressing it gently. Listen for the click that tells you that you've closed the holder securely.

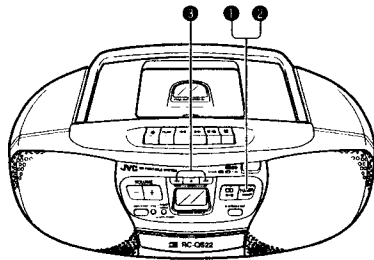


RADIO RECEPTION

Operate in the order shown.



(RC-QW35)



(RC-QS22)

- ① Press the TUNER (FM/AM) button.
 - The power is switched on and a band and radio frequency will be shown in the display.
 - When battery power is used, switch on the POWER button first, then perform operations.
- ② Select the band (FM or AM).
- ③ Tune to the required station.

STEREO AUTO/MONO button (using the remote control)

Auto mode:

Set to this position when listening to or recording an FM stereo broadcast. The STEREO indicator lights when the FM stereo broadcast is received.

MONO:

Set to this position when FM stereo reception is noisy. When another station is tuned to in mono mode, the unit automatically enters Auto mode.

Seek tuning

Press the UP or DOWN button for one second or more; the unit enters the seek tuning mode and tunes to higher or lower frequencies, and when the broadcast is received, it stops tuning automatically and the broadcast can be heard.

Manual tuning

Each time the UP or DOWN button is pressed, the unit steps through the current frequency band. Tuning is in steps of 50 kHz for FM and 9 kHz for AM.



Notes:

- When seek tuning to the required station is not possible because it is broadcasting too weak a signal, press the UP or DOWN button momentarily to perform manual tuning.
- When the power is set to STANDBY, or another mode (TAPE or CD) is selected, the last tuned frequency is stored in memory. When the power is switched on again and TUNER (FM/AM) button is pressed, the same station will be heard.

Auto preset tuning

This function scans the current band (FM or AM), detecting frequencies used to broadcast signals, and stores the first 15 frequencies in memory automatically.

- Press the AUTO PRESET (—) button for more than 2 seconds. The frequencies of stations broadcasting signals can be preset automatically in the order of increasing frequency (15 stations in each band (FM and AM)).

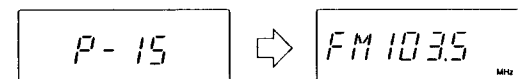
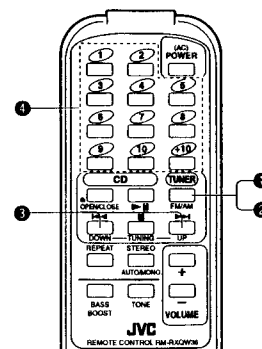
Note:

- The previous preset station is erased when a new station is set as the new station's frequency replaces the previous frequency in memory.

Presetting stations (using the remote control unit)

15 stations in each band (FM and AM) can be preset as follows:

- Example (when presetting an FM station broadcasting at 103.5 MHz to preset button "15")



- ① Press the TUNER (FM/AM) button.
- ② Select the FM band using the TUNER (FM/AM) button.
- ③ Tune to the required station.
- ④ Press preset button "+10", then "5" for more than 2 sec. (When "15" blinks in the preset station display, the station has been preset.)

- Repeat the above procedure for each of the other stations, using a different preset button each time.
- Repeat the above procedure for the AM band.

To change preset stations

Perform step ④ above after tuning to the required station.

Notes:

- The previous preset station is erased when a new station is set as the new station's frequency replaces the previous frequency in memory.
- When listening to an AM broadcast, noise may be heard if the remote control is used.

- All preset stations will be erased when a power failure occurs for more than 48 hours or the power cord is unplugged for more than 48 hours. In such cases, preset the stations again.

Preset tuning

- The stations must be preset before this operation can be performed.

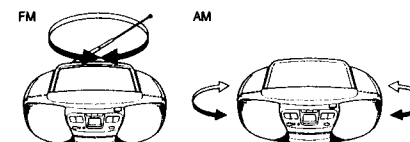
(Using the controls of the main unit)

- ① Press the TUNER (FM/AM) button.
- ② Select the band (FM or AM) using the TUNER (FM/AM) button.
- ③ Press the PRESET TUNING (•) button to select the required preset station.

(Using the remote control unit)

- ① Press the TUNER (FM/AM) button.
- ② Select the band (FM or AM) using the TUNER (FM/AM) button.
- ③ Press the required preset station buttons (No. 1–No. 10, +10).
- The preset station number and frequency corresponding to the button pressed are shown.

Using the antennas



Note:

The built-in ferrite core antenna can pick up interference from television receivers in the neighborhood and thereby disturb AM reception.

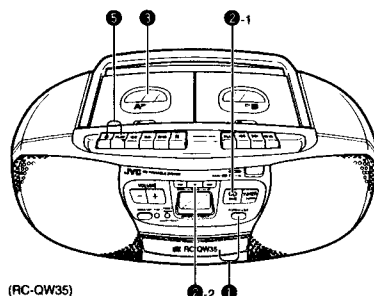
RECORDING

- In recording, the ALC circuit automatically optimizes the recording level; adjustment of the recording level is unnecessary.
- Check that the safety tab on the cassette tape is not broken off.
- To avoid malfunction, do not perform operations on deck B when recording. (RC-QW35)

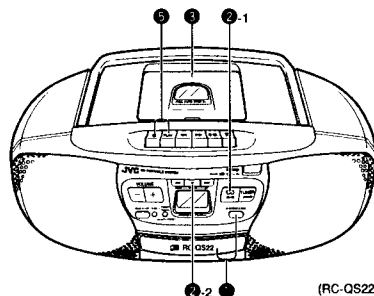
Synchronized recording with the CD player

- In this system, the CD player starts playback when the cassette deck enters the recording mode.

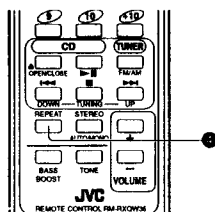
Operate in the order shown.



(RC-QW35)



(RC-QS22)



- Load a disc and close the CD tray.
- Set CD mode.
- Load a cassette in the deck with side A facing up. (Wind past the leader tape before starting recording.)
- Set repeat mode to an appropriate position if needed. (◀ or ▶ ALL)
- Press the ● REC button with the PLAY/TAPE button; synchronized recording will start.

- Non-recorded sections of approx. 4 seconds are automatically left between tunes.
- When the tape reaches the end first, the CD player stops automatically; when the CD player stops first, the tape continues running. In this case, press the ■/▲ STOP/EJECT button to stop the tape.

Notes:

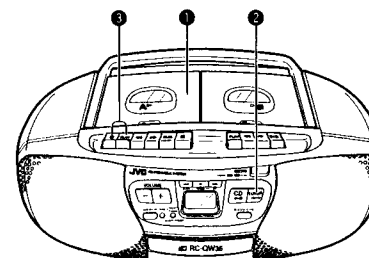
- During CD synchro recording, the CD/▶ and SEARCH (◀/▶) buttons do not function.
- During CD synchro recording, do not perform operations on Deck B. (RC-QW35 only)

It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

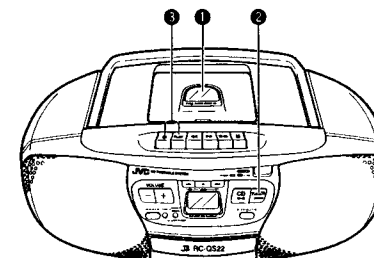
- When automatic spacing between tunes is not required ... Perform the following after finishing the previous operation (● to ●):
- Press the CD/▶ button of the CD player twice. The CD player enters the pause mode.
 - Press the ● REC and PLAY/TAPE buttons simultaneously. Now, the CD player starts playback simultaneously.

Recording from the radio

Operate in the order shown.



(RC-QW35)



(RC-QS22)

- Load a cassette with side A facing up. (Wind past the leader tape before starting recording.)
 - Press the TUNER (FM/AM) button. Tune to the required station.
 - Press the ● REC button with the PLAY/TAPE button.
- To stop recording temporarily, press the ■ PAUSE button. To resume recording press the ■ PAUSE button again.

Note:

When recording from the radio, do not perform operations on Deck B. (RC-QW35 only)

BEAT CUT switch

When recording an AM broadcast, beats may be produced which are not heard when listening to the broadcast. In such a case, set this button after setting the deck to record mode so that the beats are eliminated. Normally set this switch to "NORM-1".

Erasing

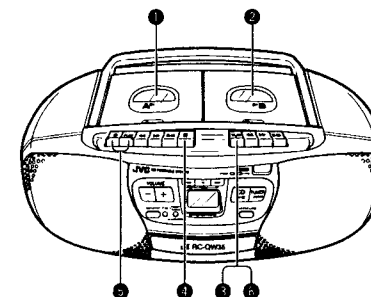
When recording on a pre-recorded tape, the previous recording is automatically erased and only the new material can be heard when the tape is played.

To erase a tape without making a new recording ... Press the PLAY/TAPE button of the deck to set to the TAPE mode and press the ● REC and PLAY/TAPE buttons together after pressing the ■/▲ STOP/EJECT button.

DUBBING (SYNCHRO START DUBBING) (RC-QW35 ONLY)

Normal speed dubbing can be done from Deck B to Deck A.

Operate in the order shown.



(RC-QW35)

- Load a cassette. (Refer to the note on page 16.)
- Load a pre-recorded cassette.
- Lightly press the PLAY/TAPE button to set to the TAPE mode. (The button should not be locked.)

- Press the ■ PAUSE button.
- Press the ● REC button with the PLAY/TAPE button. (Record-pause mode.)
- Press the PLAY/TAPE button. (Synchronized dubbing will start.)

MAINTENANCE

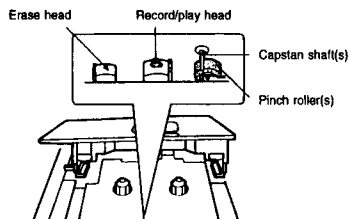
Cleaning is important!

When the tape is running, magnetic powder and dust naturally accumulate on the heads, capstan and pinch roller. When they become too dirty ...

- sound quality deteriorates.
 - the output sound level drops.
 - the previous sound is not completely erased.
 - recording is not performed satisfactorily.
- Because of this, you should clean the heads, etc. every 10 hours of use, so that perfect recording is possible.

Cleaning the heads, capstan and pinch roller

Open the cassette holder.
Clean the heads, pinch roller and capstan.
For effective cleaning, use a cleaning kit available from an audio store.
After cleaning, be sure that the cleaning fluid has dried completely before loading a cassette.



Cautions:

1. Keep magnets and metallic objects away from the head. If the head becomes magnetized, noise will increase and the tone will deteriorate. Demagnetize the head every 20–30 hours of use with a head eraser (available from an audio store). (When demagnetizing the head, the POWER button should be set to STANDBY).
• As the erase head of this unit is of magnetic type, do not demagnetize it.
2. Do not use anything other than alcohol for cleaning. Thinner and benzene will damage the rubber pinch roller.

TROUBLESHOOTING

What appears to be trouble is not always serious. Make sure first....

1. **Power cannot be turned on.**
 - Is the power cord unplugged?
2. **No sound from the speakers.**
 - Are headphones connected?
- CD Player Section
3. **The CD player does not play.**
 - Is the disc upside down?
 - Is the disc dirty?
4. **A certain portion of the disc does not play correctly.**
 - Is the disc scratched?
- Cassette Deck Section
5. **Playback sound is at a very low level.**
 - Is the head dirty?
6. **The ● REC button does not function.**
 - Have the safety tabs of the cassette been broken off?
- Tuner Section
7. **Reception is noisy.**
 - Try adjusting the antenna.
- Remote Control
8. **Remote control is impossible.**
 - Are the batteries in the remote control exhausted?
 - Is the remote sensor section exposed to bright light (direct sunlight, etc.)?

Note:

Before making an important recording, be sure to make a test recording first to check that the deck, etc. is working correctly.

SPECIFICATIONS

Compact disc player section

Type : Compact disc player
Signal detection : Non-contact optical pickup
Number of channels : 2 channels
Frequency range : 20 Hz – 20,000 Hz
Signal-to-noise ratio : 90 dB
Wow & flutter : Less than measurable limit

Radio section

Frequency ranges : FM: 87.5 – 108 MHz
AM: 522 – 1,629 kHz
Antennas : Telescopic antenna for FM
Ferrite core antenna for AM

Tape deck section

Track system : 4-track 2-channel stereo
Motor : Electronic governor DC motor for capstan
Heads : (RC-QW35)
Deck A: Hard permalloy head for recording/playback, Magnetic head for erasure
Deck B: Hard permalloy head for playback (RC-QS22)
Hard permalloy head for recording/playback, Magnetic head for erasure
Frequency response : 80 – 12,500 Hz

Wow and flutter : 0.15% (WRMS)
Fast wind time : Approx. 120 sec (C-60 cassette)

General

Speaker : 10 cm x 2
Power output : Max. 10 W (5 W + 5 W) at 3 Ω
8 W (4 W + 4 W) at 3 Ω (10% THD)
Output jacks : Headphones (0 – 20 mW/ch, 32 Ω)
(matching impedance 16 Ω – 1 kΩ)
Power supply : AC 230 V, 50 Hz
DC 10.5 V ("R20/D (13F)" cell x 7)
Power consumption : 13 W (with POWER button ON)
3 W (with POWER button STANDBY)
Dimensions : 450 (W) x 165 (H) x 250 (D) mm
including knobs
Weight : (RC-QW35)
Approx. 4.9 kg with batteries
Approx. 4.2 kg without batteries
(RC-QS22)
Approx. 4.6 kg with batteries
Approx. 3.9 kg without batteries
Accessories provided : AC power cord x 1
Remote control unit (RM-RXQW35) x 1
"R6/AA (15F)" batteries x 2 (for the remote control)

Design and specifications are subject to change without notice.

1 Location of Main Parts

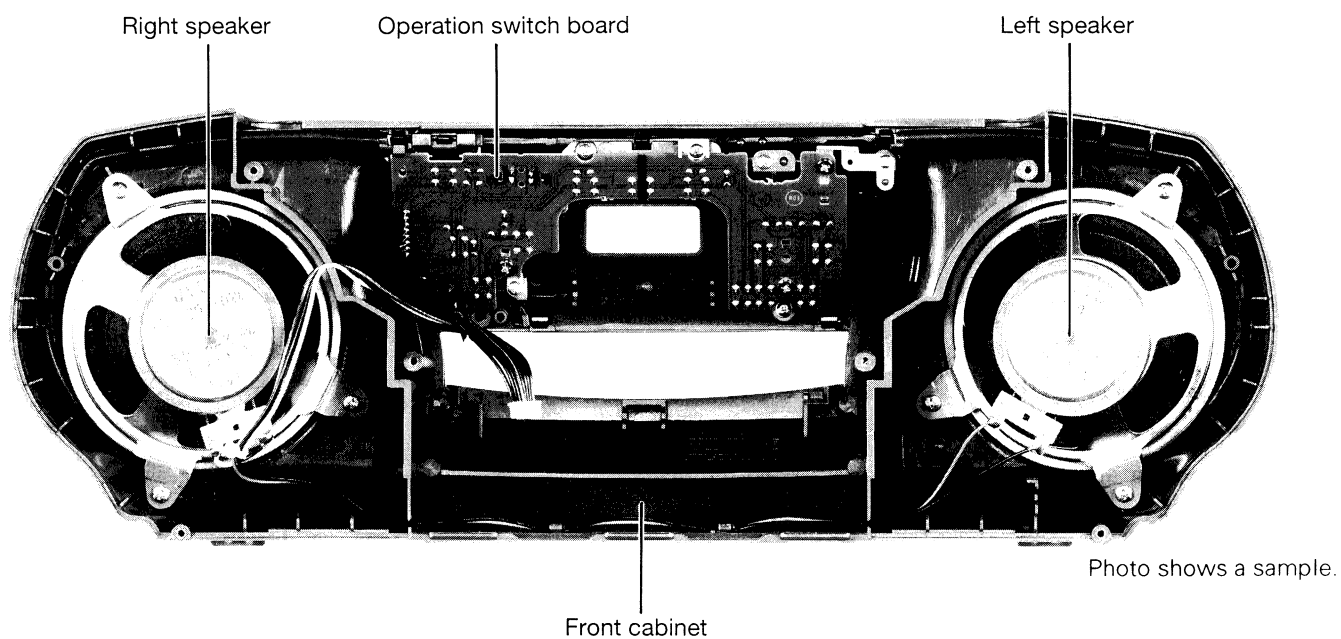


Fig. 1 - 1

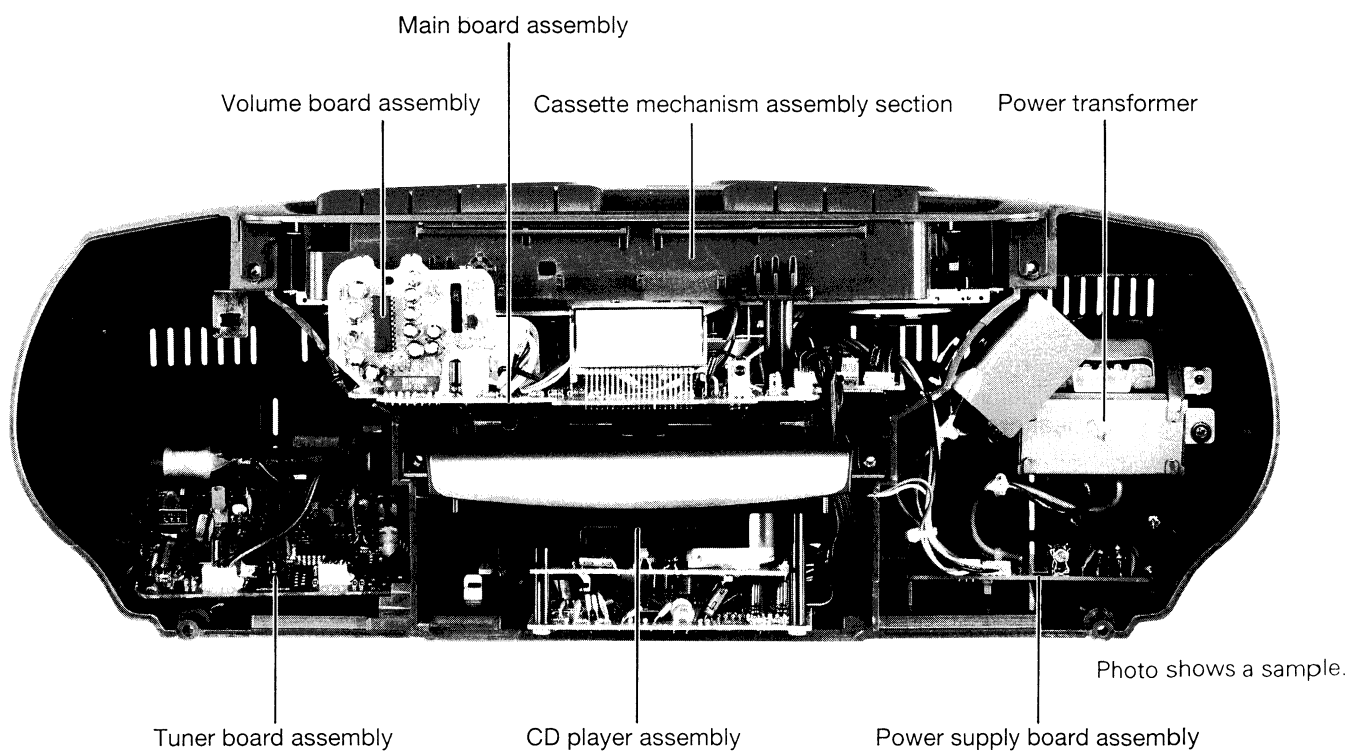


Fig. 1 - 2

2 Removal of Main Parts

◆ Removing the front and rear cabinet assemblies

(Figs. 2-1 to 2-4)

1. At the rear of the main unit, press the two claws ④ of the battery compartment cover downward to remove the battery cover (Fig. 2-1).
2. Remove the two handle mounting screws ① and the four rear cabinet mounting screws ②. Then remove the front and rear cabinet assemblies (Fig. 2-1).
3. Remove the speaker harness coming from the front cabinet assembly and the operation switch board harness connected to the CN704 and CN309 connectors on the main PCB (Fig. 2-2).
4. For removing the handle and top cover, extend the rear cabinet outwards (as indicated by the lateral arrows) and it is disengaged from the right and left fittings ⑥. Then, the handle can be removed in the direction of the arrow (rearwards).

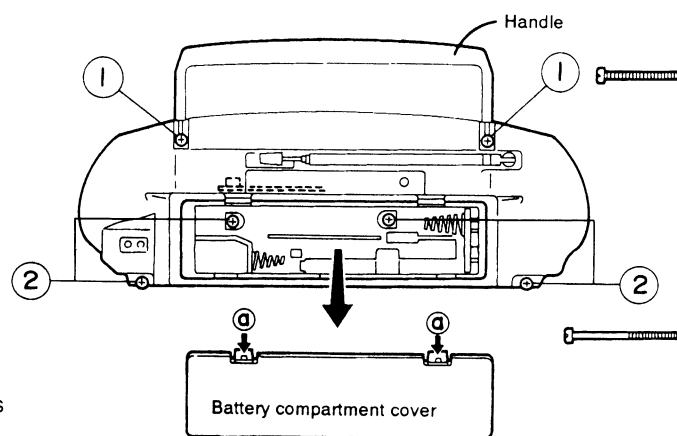


Fig. 2-1

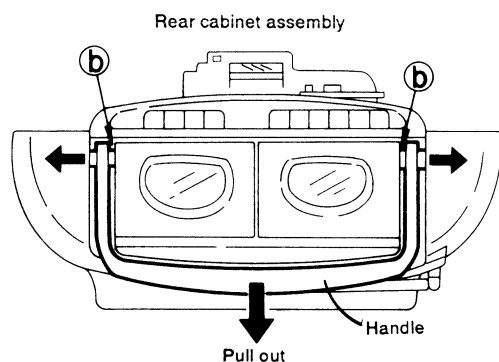


Fig. 2-3

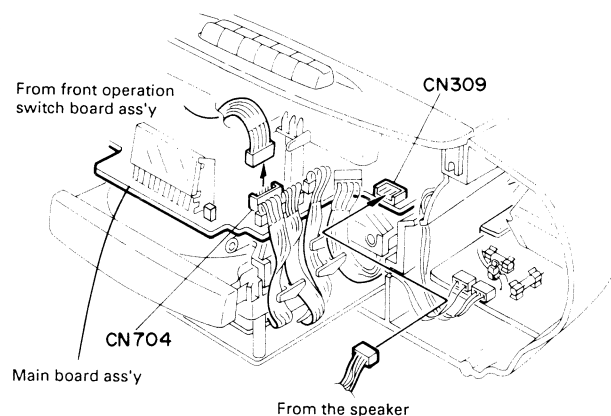


Fig. 2-2

◆ Removing the speakers and the operation switch PCB (Fig. 2-4)

1. Remove the three right speaker mounting screws ③ and the speaker brackets. (Remove screws for the left speaker as well.)
2. Remove the three screws ④ retaining the switch board mounting screws.
3. Remove the one screw ⑮ retaining the speaker earth wire.

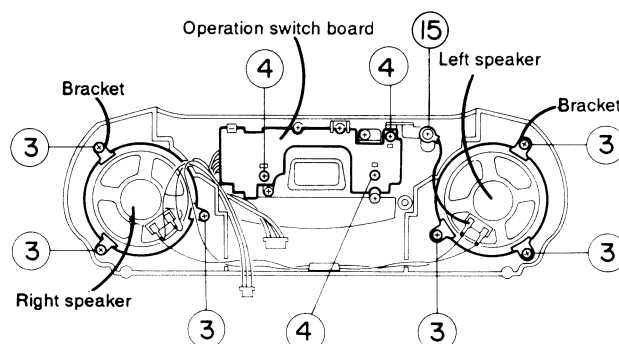


Fig. 2-4

◆ Removing the tuner PCB (Fig. 2 – 5)

1. Remove connectors CN2 and CN3 on the tuner board.
2. Remove the antenna wire from TP1.
3. Disengage the board from the fitting of part ③ on the rear cabinet (in the direction shown with the arrow) and pull it out.

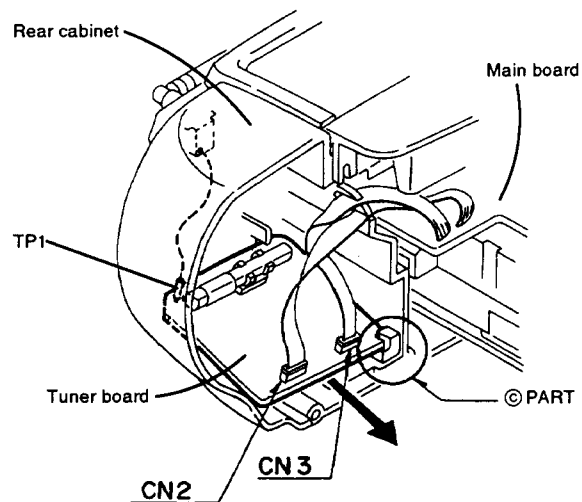


Fig. 2 – 5

◆ Removing the power transformer and the power supply board (Fig. 2 – 6)

1. Remove the two screws ⑤ securing the AC terminal.
2. Disconnect the two connectors (CN306 and CN307) on the power supply board.
3. Remove the two screws ⑥ securing the power transformer.
4. Pull the power supply board toward you and remove it together with the power transformer.

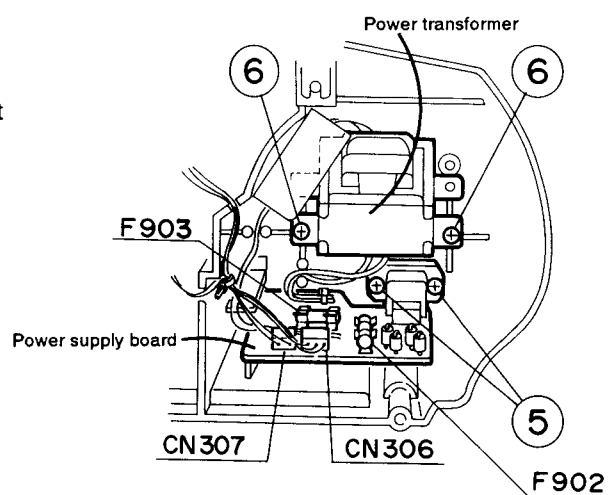


Fig. 2 – 6

◆ Removing the volume PCB (Fig. 2 – 7)

1. Remove the screw ⑦ securing the volume board
2. Disconnect the connector CN310 from main board.

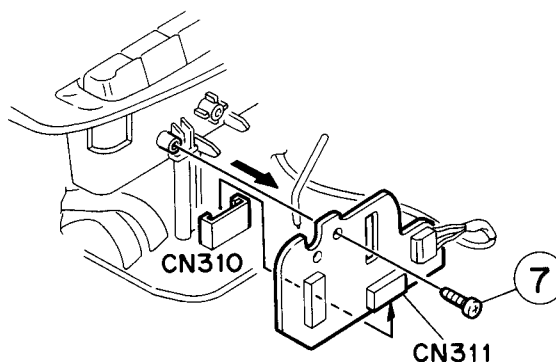


Fig. 2 – 7

◆ **Removing the CD player assembly** (Fig. 2 – 8)

1. Remove the harnesses CN701, CN702, CN703 and CN303 from the main board (connectors on main board CN701, CN702, CN703 and CN303).

◆ **Removing the CD amp PCB** (Fig. 2 – 9)

1. Remove the two screws ⑧ securing the CD amp PCB.
2. Remove the harness of connector CN502 from P011 on the pickup PCB.
3. Remove the card wire coming from P001 from CN501.

◆ **Removing the CD tray** (Figs. 2 – 10 and 2 – 11)

1. Remove the two screws ⑨ for the CD tray stopper.
2. Turn over the loading base assembly. Insert a Phillips driver in hole A of the CD tray motor assembly and turn the driver counterclockwise. The tray will be released.
3. When the tray is released, pull it out by hand.

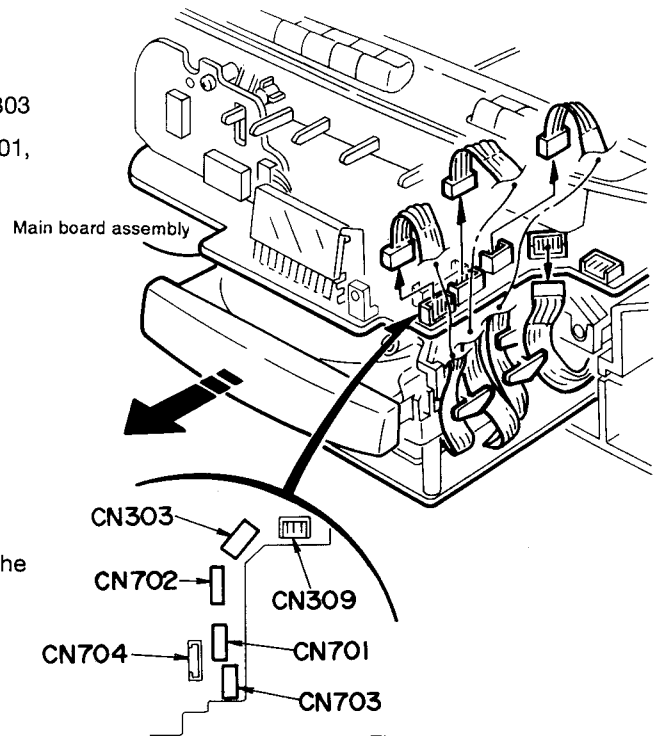


Fig. 2 – 8

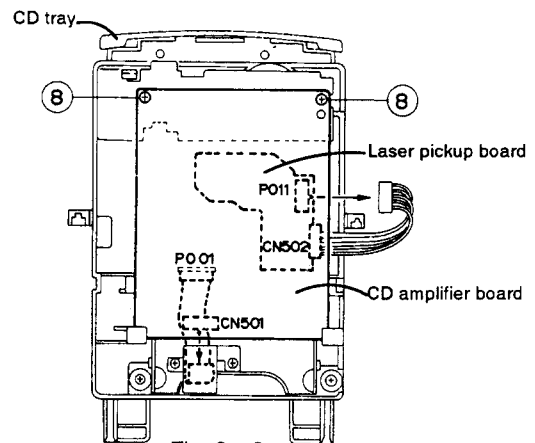


Fig. 2 – 9

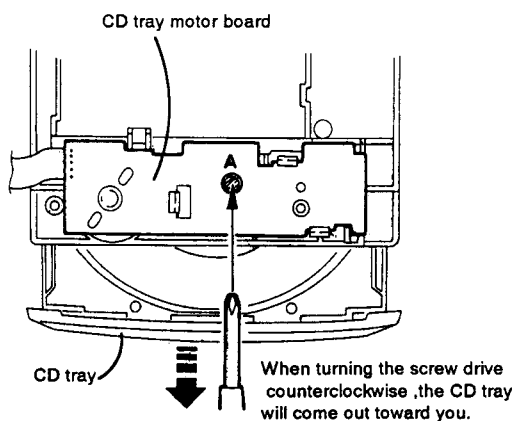


Fig. 2 – 11

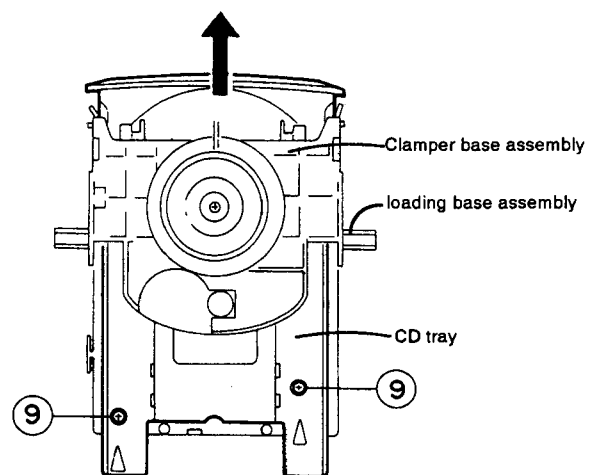


Fig. 2 – 10

◆ Removing the clamber base assembly (Fig. 2 – 12)

Remove the two screws ⑩ securing the clamber base assembly.

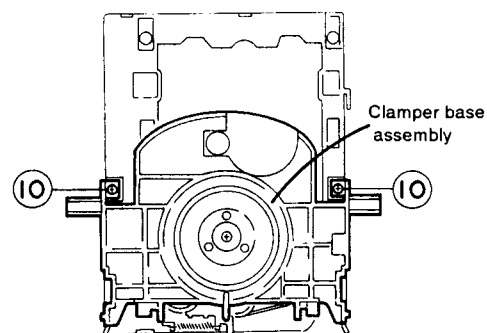


Fig. 2 – 12

◆ Removing the CD tray motor (Figs. 2 – 13 and 2 – 14)

1. Remove the two screws ⑪ securing the CD tray motor.

2. Disengage the belt from the CD tray motor base.

3. Turn over the CD tray motor base assembly.

☆ Desolder soldered section ⑥ on the CD tray motor PCB.

☆ Remove the PCB by opening the three claws ⑧ on the CD tray motor PCB in the direction shown by the arrow.

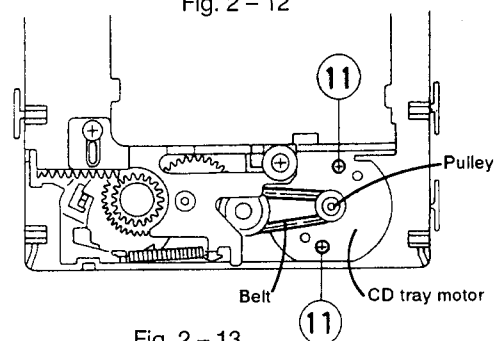


Fig. 2 – 13

◆ Removing the CD mechanism assembly (Fig. 2 – 15)

1. Turn over the CD player assembly and remove the two screws ⑫ securing the CD mechanism assembly.

2. To remove shaft in the upper part of the CD mechanism assembly from the fitting of section ⑨ (slot of the slide) of the loading base assembly, pull the CD mechanism assembly diagonally upward toward you.

★ To reassemble, move the slide of the loading base assembly in the direction shown with the arrow and insert the shaft in the upper section of the CD mechanism assembly into section ⑨ (slot of the slide).

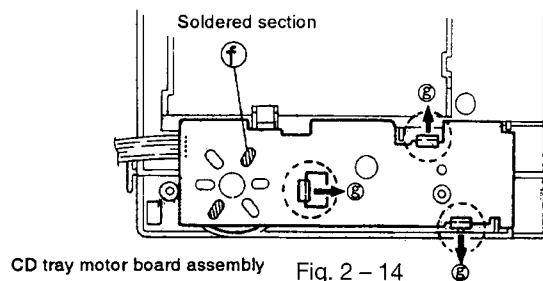
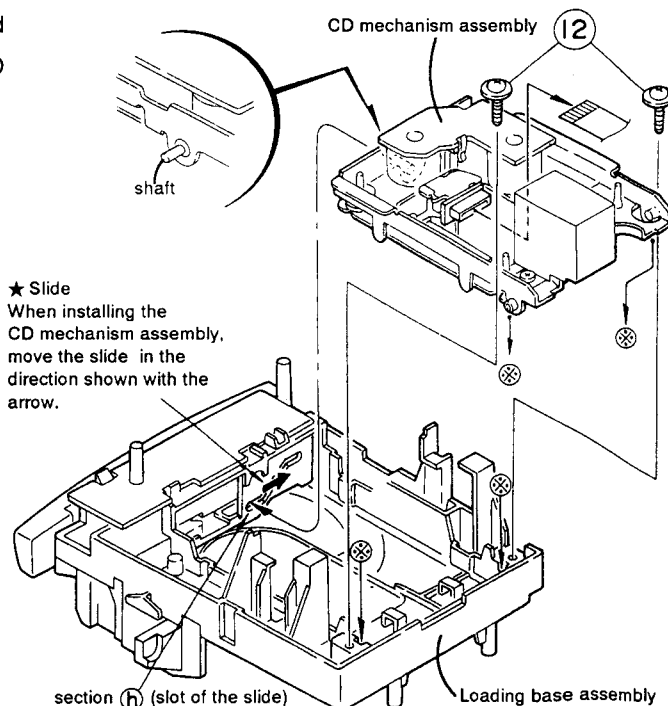


Fig. 2 – 14



★ Slide
When installing the CD mechanism assembly, move the slide in the direction shown with the arrow.

Fig. 2 – 15

◆ Removing the cassette mechanism assembly

(Fig. 2 – 16)

1. Remove the handle (Fig. 2-3).
2. Remove the CD player assembly (Fig. 2-8).
3. Remove the harness coming from connectors CN702 and FW302 on the main board from connectors CN3 and CN2 on the tuner board.
4. Remove the 3 - pin connector coming from the main board from connector CN306 on the power supply board.
5. Remove the cassette mechanism assembly by pulling it out in the direction shown with the arrow.

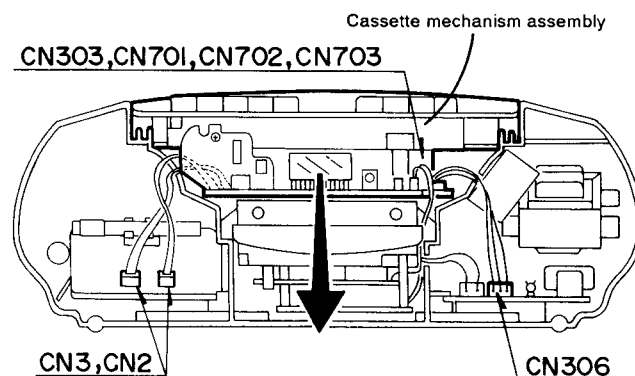


Fig. 2 – 16

◆ Removing the main PCB (Figs. 2 – 17 and 2 – 18)

1. Remove the four screws ⑬ securing the main board from the rear of the cassette mechanism assembly.
2. Remove the harness coming from the cassette mechanism from connectors CN301, CN302 and CN305 on the main PCB. When connecting connector CN305, trim the harness by referring to Fig. 2 – 18.

☆ The volume board and main board are connected by a harness. To separate the main board completely from the rear cabinet, first remove the volume board. Refer to "Removing the microphone unit and the volume PCB".

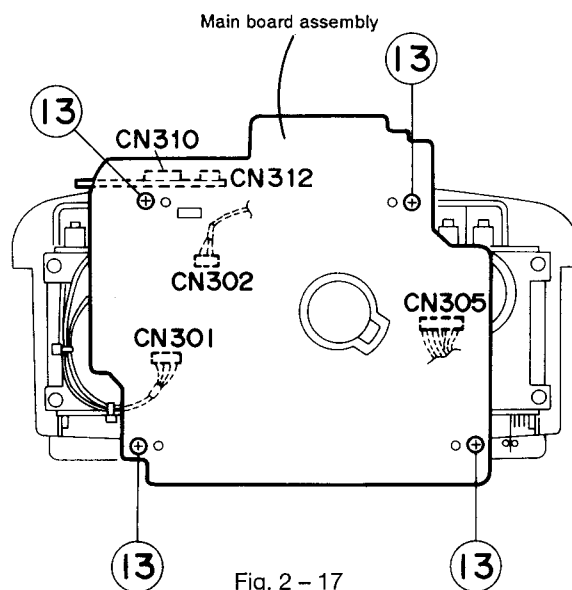


Fig. 2 – 17

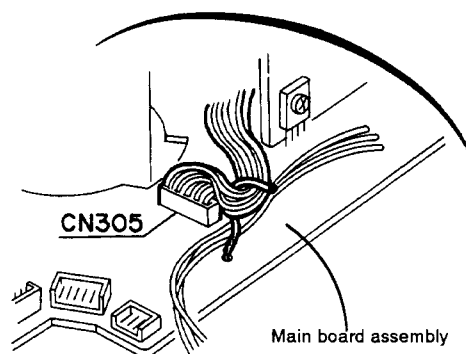


Fig. 2 – 18

◆ Removing the cassette mechanism

(Figs. 2 – 19 and 2 – 20)

1. Press the stop/eject buttons for mechanisms A and B to open the cassette doors (Fig. 2 – 19).
2. Remove the six screws ⑭ securing the cassette mechanism (Fig. 2 – 20).

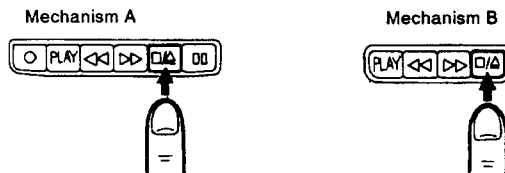


Fig. 2 – 19

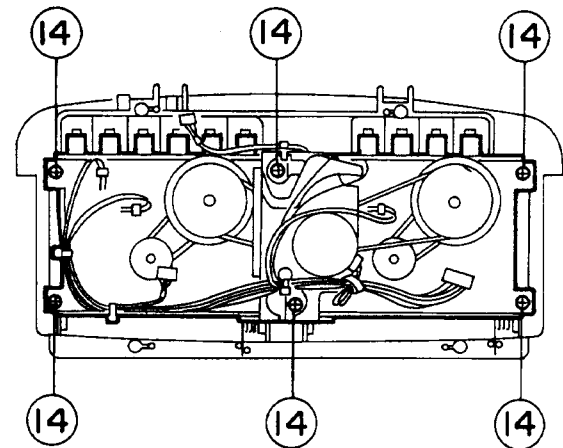


Fig. 2 – 20

◆ Removing the battery contact PCB

(Fig. 2 – 21)

1. Open the claw ① securing the battery contact board from the rear of the rear cabinet and pull out the battery contact board toward the rear panel.
2. Remove the 2-pin connector coming from the battery contact board from connector CN703 on the power supply board.

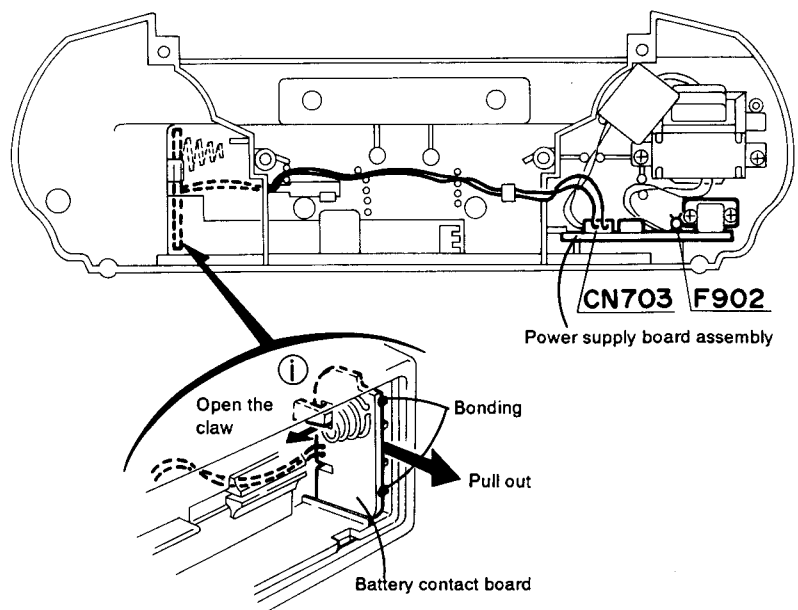


Fig. 2 – 21

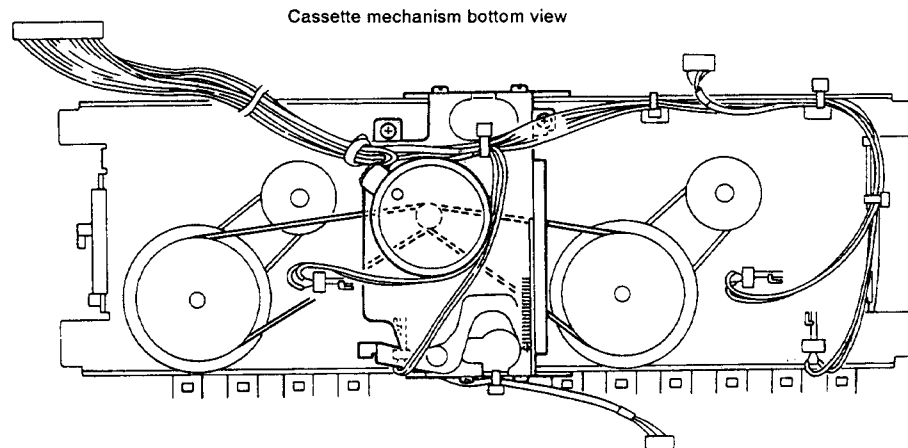


Fig. 2 - 22

◆ **Removing the capstan motor** (Figs. 2 - 22 and 2 - 23)

1. Separate the front and rear cabinet assemblies.
2. Remove the cassette mechanism assembly.
3. Remove the main board.
4. Remove the main belt from the flywheel assembly of mechanisms A and B.
5. Remove the three screws ② securing the capstan motor.

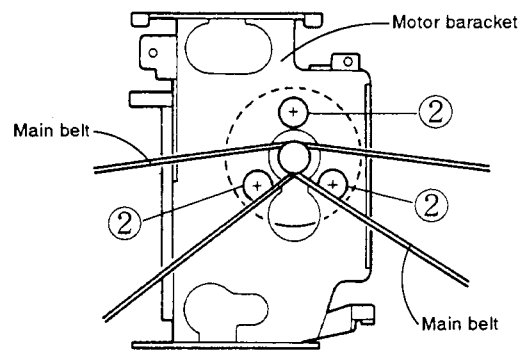


Fig. 2 - 23

◆ **Removing the eject slide lever** (Fig. 2 - 24)

1. Press the stopper arm with a small minus driver as shown in the figure to release the stopper arm.
2. Remove the eject slide lever in the direction shown with the arrow ③.

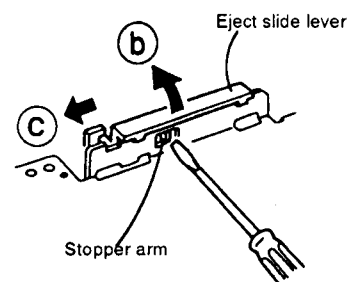


Fig. 2 - 24

◆ **Removing the leaf switch** (Fig. 2 - 25)

1. Press the leaf switch in the direction shown with arrow ④.
2. Remove the leaf switch by pressing it in the direction shown with arrow ⑤.

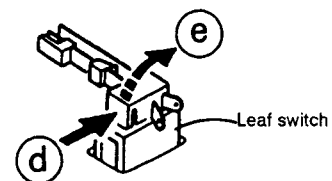


Fig. 2 - 25

◆ Removing the pinch roller (Fig. 2 – 26)

1. Detach the stopper from the pinch roller assembly by pulling it in the direction shown with arrow ①.
2. Pull out the pinch roller assembly in the direction shown with arrow ②.

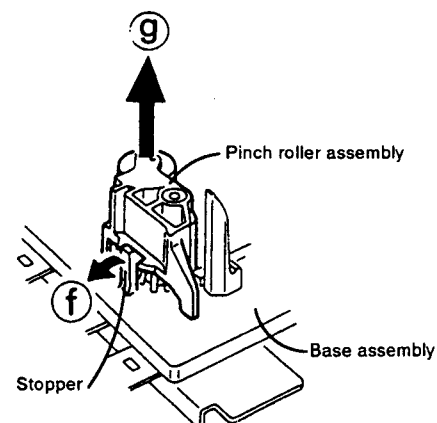


Fig. 2 – 26

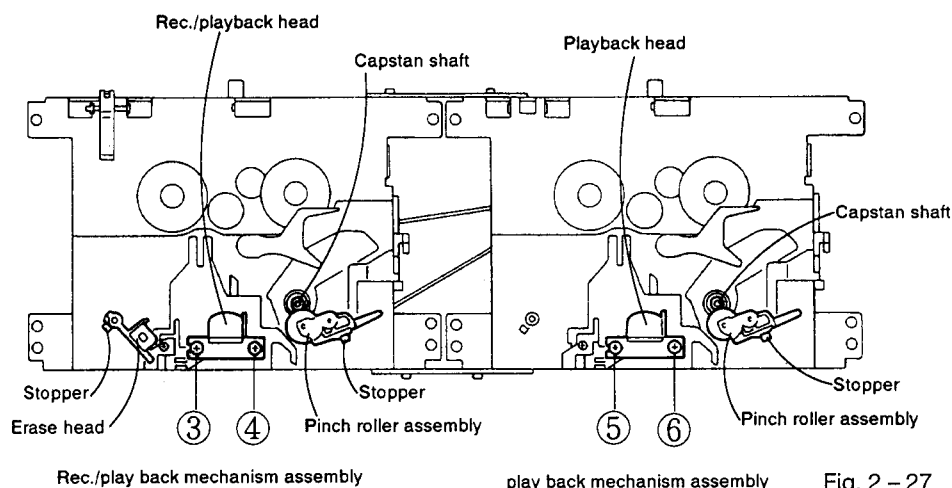


Fig. 2 – 27

◆ Removing the rec/play head and erase head

(Figs. 2 – 27 and 2 – 28)

1. Remove the two screws ③ and ④ securing the rec/play head of mechanism A.
2. Remove the two screws ⑤ and ⑥ securing the play head of mechanism B.
3. Detach the stopper securing the erase head in the direction shown with arrow ③.
4. Pull out the erase head in the direction shown with arrow ④.

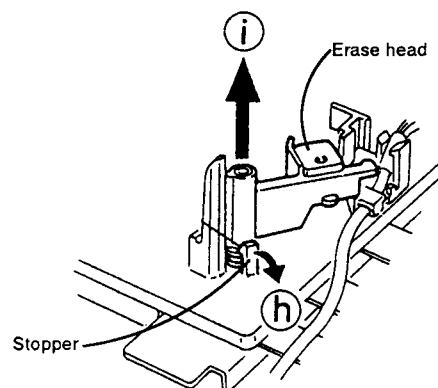


Fig. 2 – 28

◆ Removing the flywheel assembly (Fig. 2 – 29)

1. Remove the E washer securing the flywheel assembly and pull the washer out in the direction shown with arrow ⑤.
2. Pull the flywheel assembly from the cassette mechanism in the direction shown with arrow ⑥.

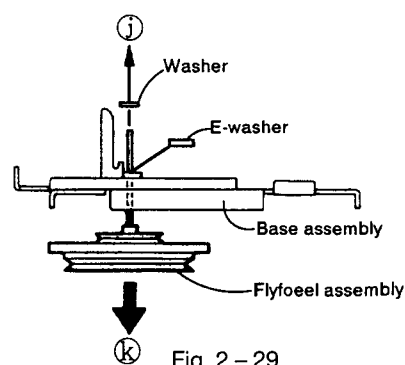


Fig. 2 – 29

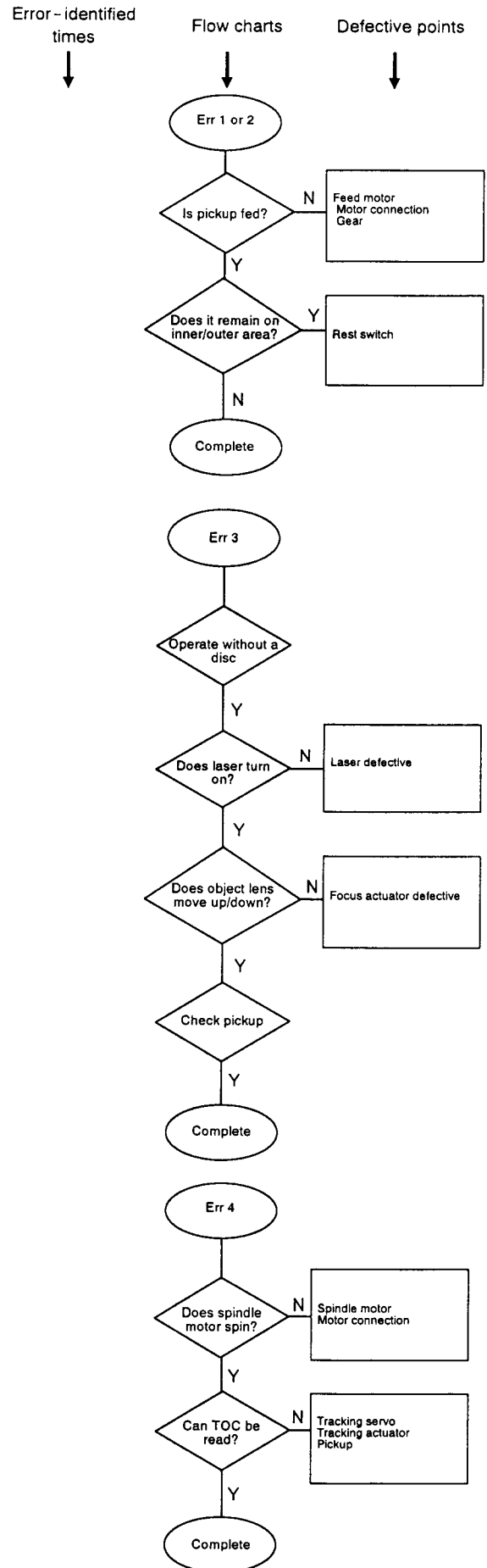
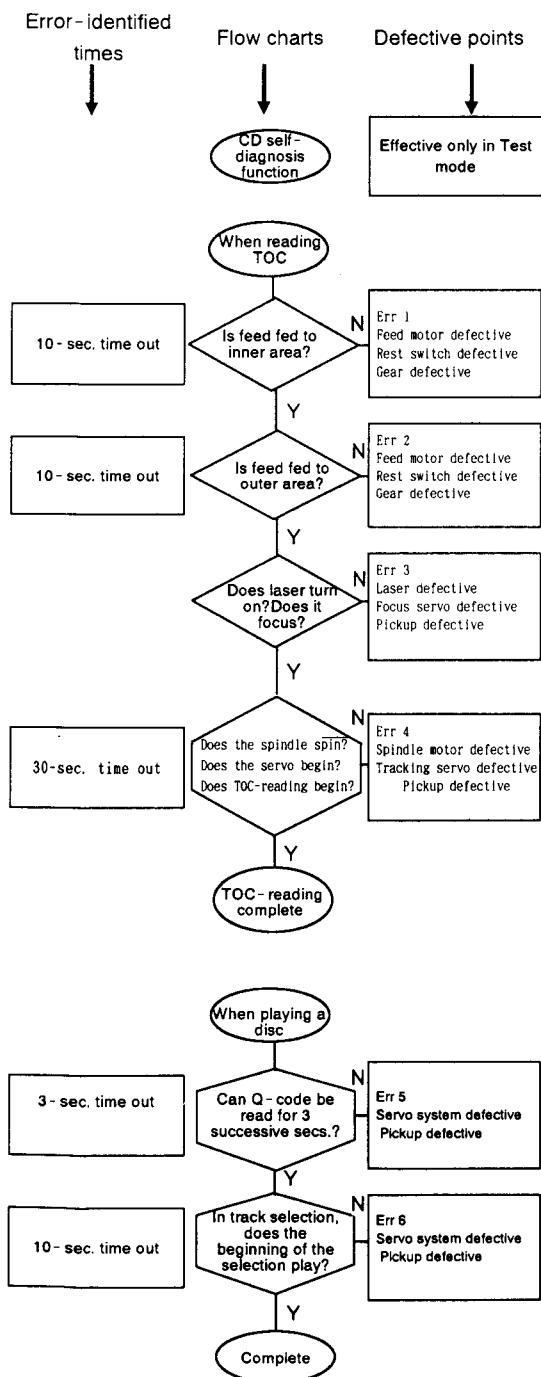
3 Troubleshooting

◆ HOW TO OPERATE THE CD SELF-DIAGNOSIS FUNCTION

◆ The CD Self-diagnosis Function

If any malfunction occurs in the CD player, this system can be set to make an error code indication appear on the LCD to point out the defective parts. This efficiently helps service personnel find the causes of the malfunction.

Test mode : CD STOP (■) + POWER ON



■ Pickup maintenance

(1) Checking the service life of laser diode

If a laser diode reaches the end of its service life, the following phenomena will show up. Similar symptoms may also appear when the pickup lens becomes too dirty. In this case, clean the lens.

1) The RF output (between TP502(RF) and TP501(VREF))

2) The driving current, necessary for the laser diode to emit lights, increases. (Calculate from the voltage level at both ends of the R505 at 10 Ω .)

◆ Following the flow chart shown below, check the service life.

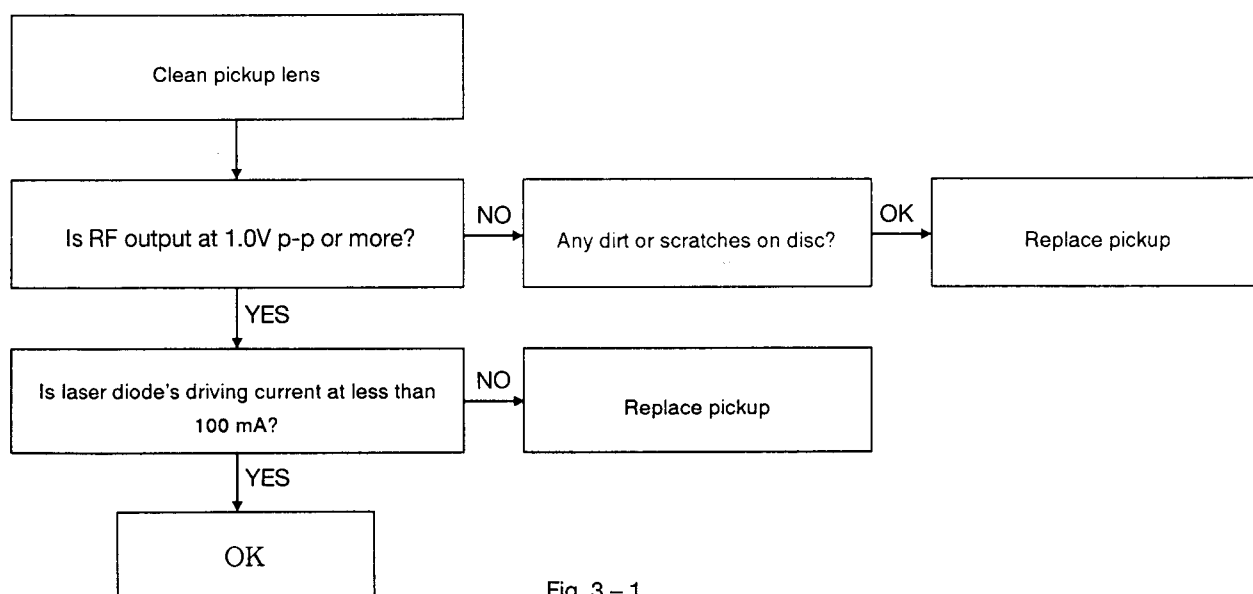


Fig. 3 – 1

◆ How to measure laser diode's driving current

After connecting a voltmeter at both ends of the R505(10 Ω), measure the voltage during playback. If the voltage level is at 1.0 V or more, the service life of the laser diode has expired.

Laser diode's driving current (A)

= Voltage level at both ends of R505 (V)/10 (Ω)

When voltage level is at 1.0 V:

$1.0 \text{ V} / 10 \Omega = 0.1 \text{ A} = 100 \text{ mA}$

Note:

The laser diode easily breaks down. Be sure to turn the power off before connecting a voltmeter.

General descriptions of TOC (Table of Contents) readings

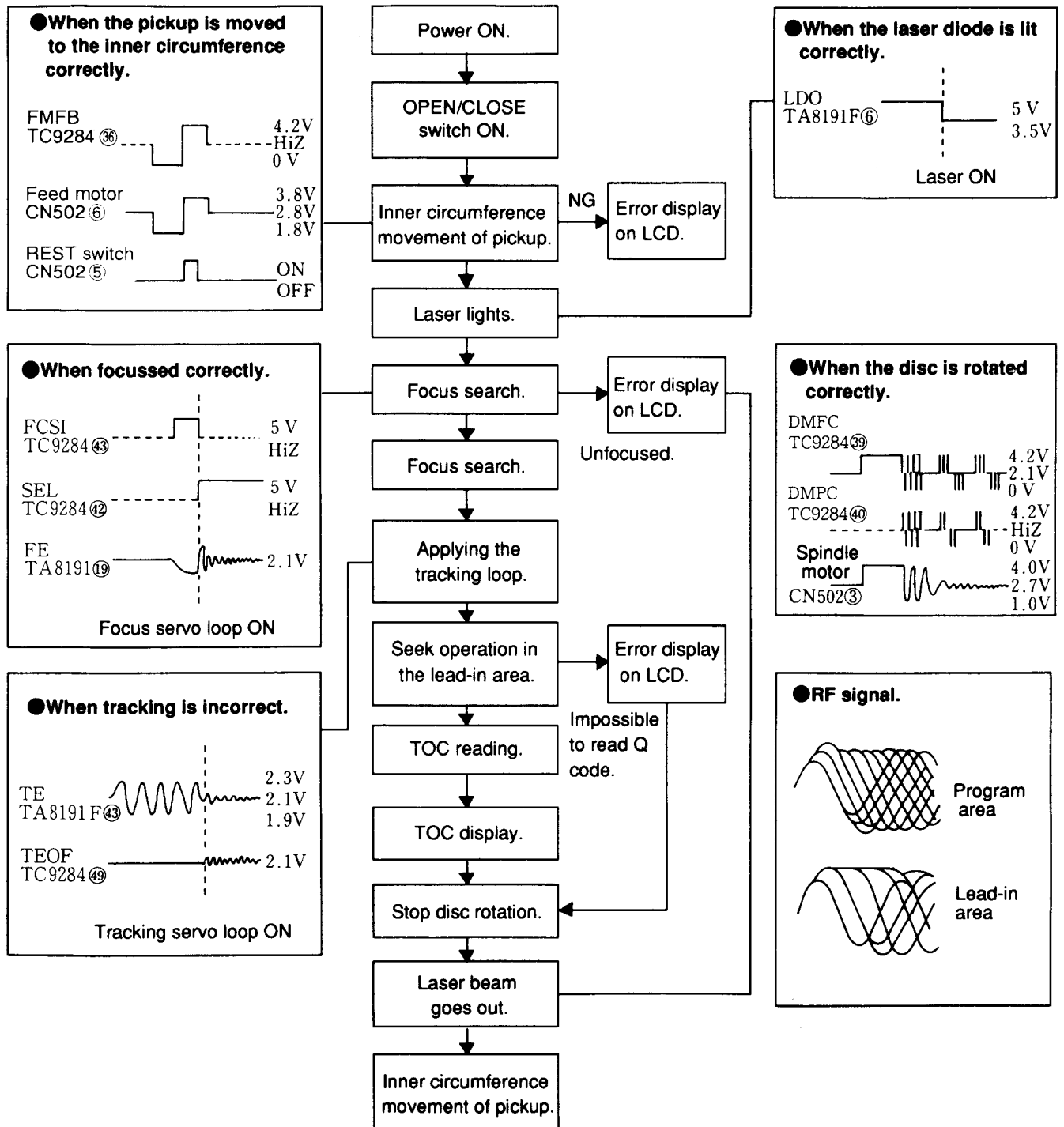


Fig. 3-2

General section

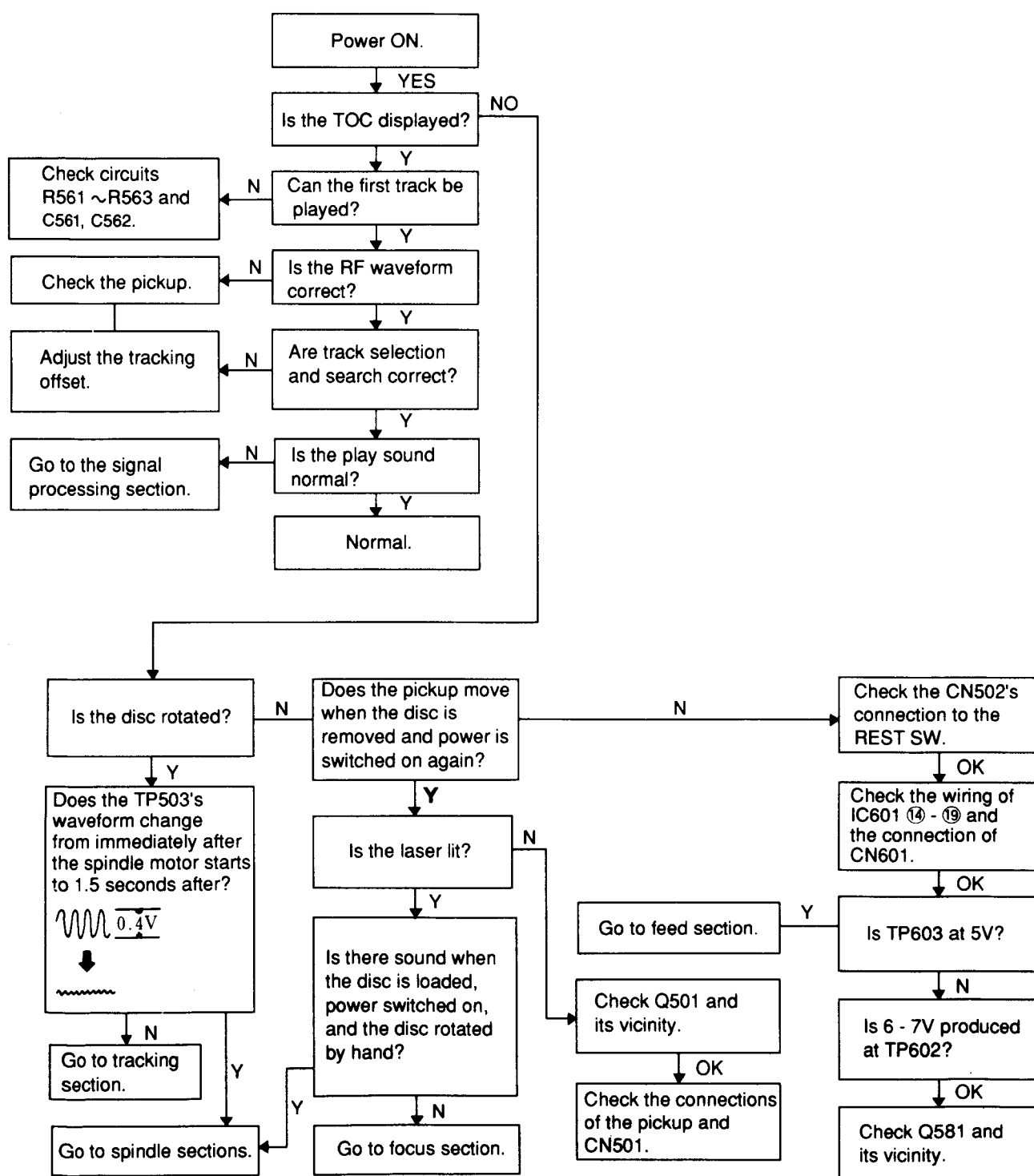


Fig. 3 - 3

■ Feed section

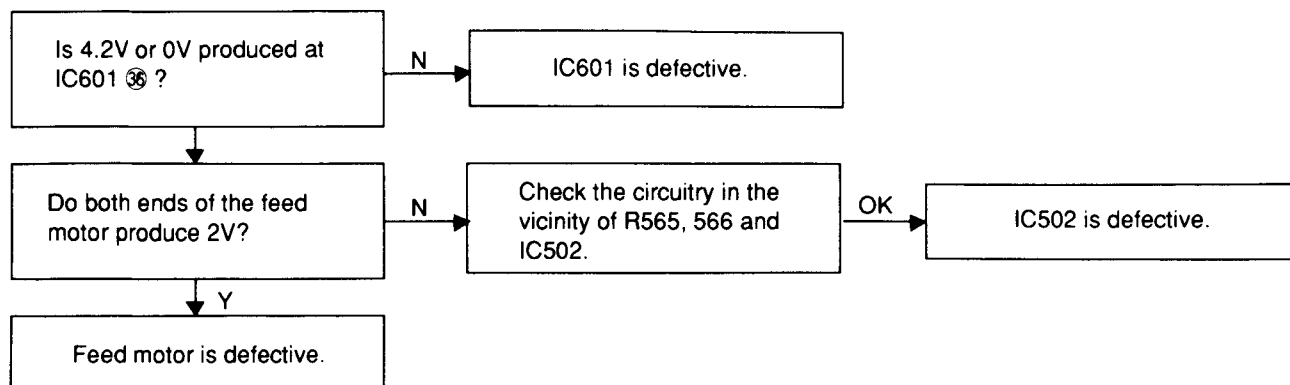


Fig. 3 - 4

■ Focus section

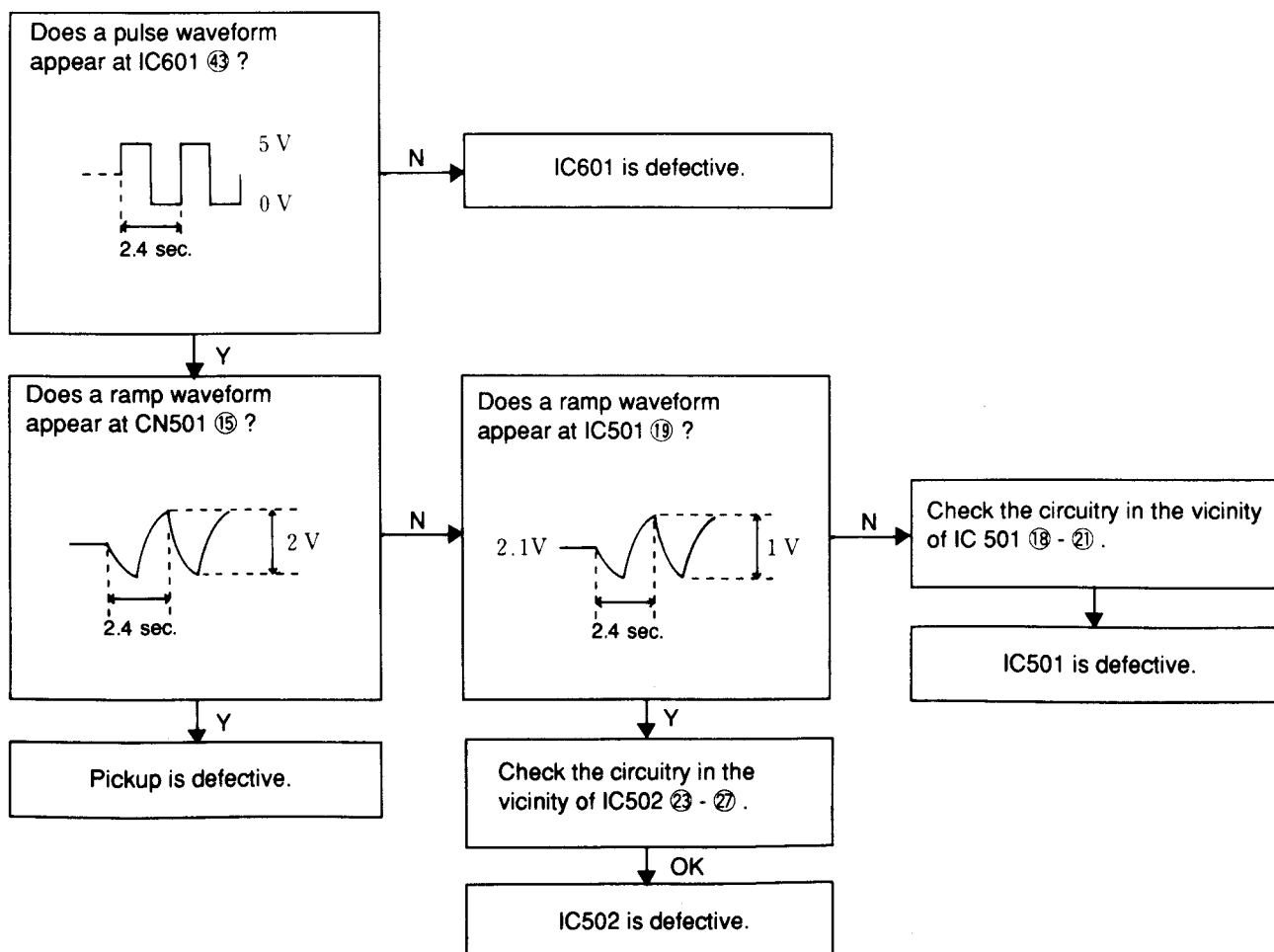


Fig. 3 - 5

■ Spindle motor section

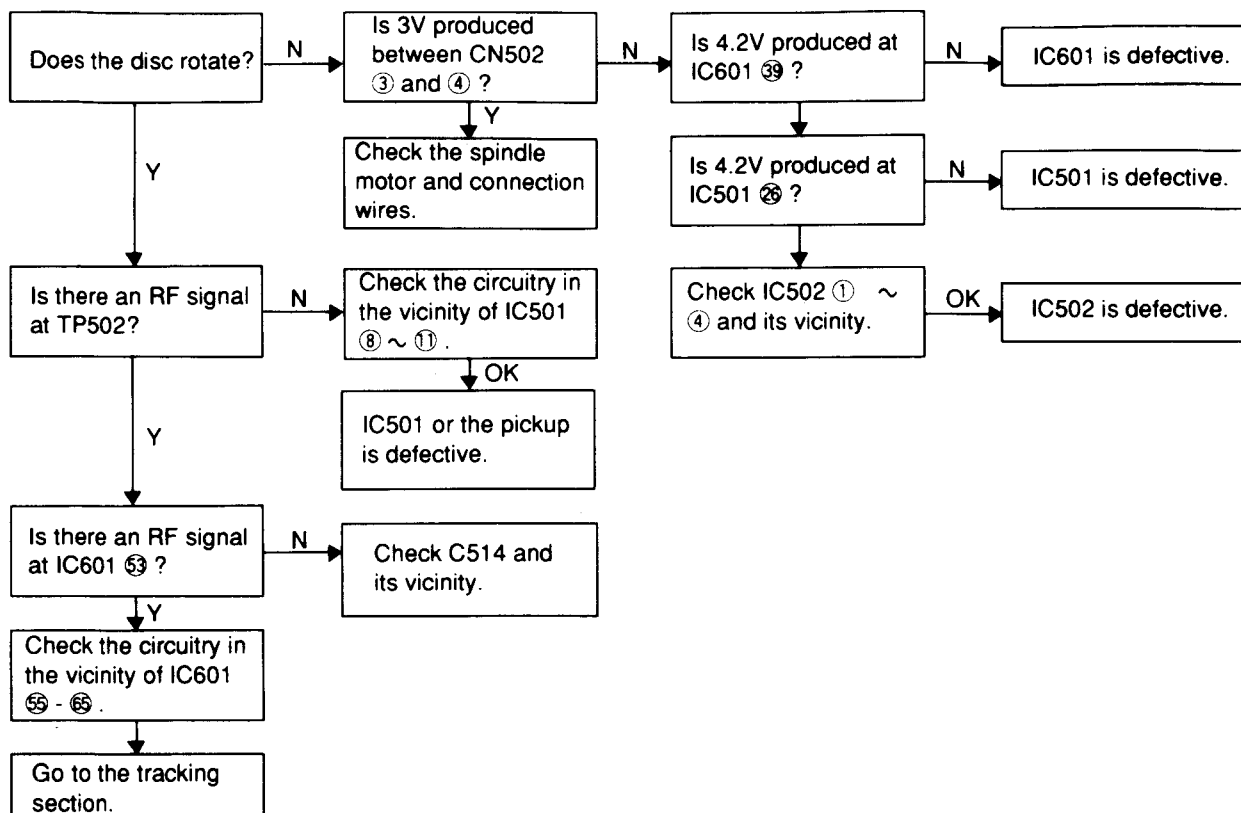


Fig. 3 - 6

■ Signal processing section

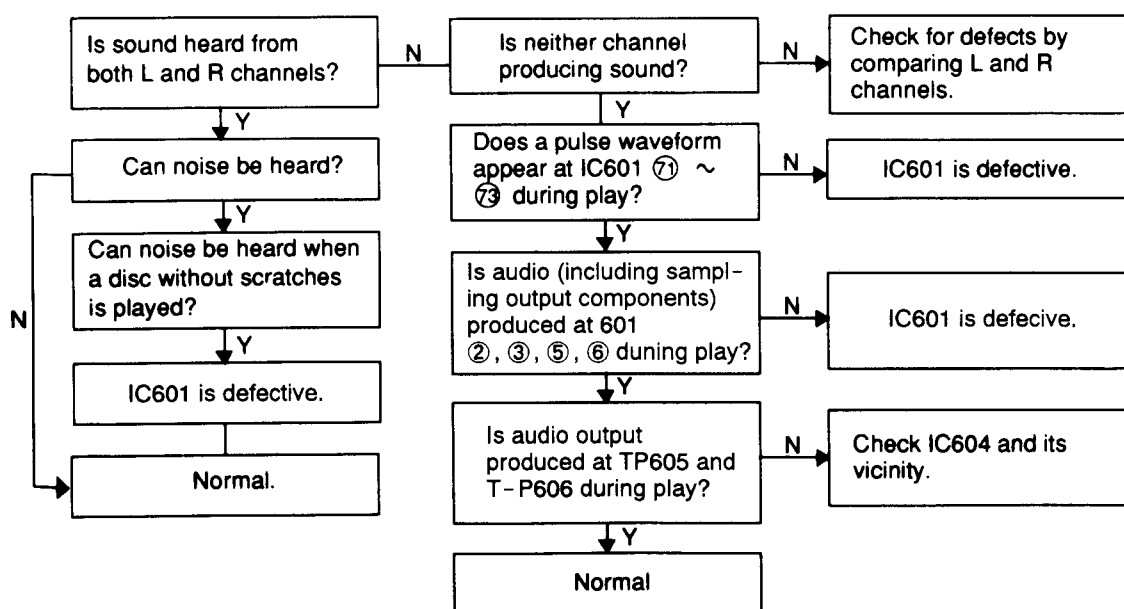


Fig. 3 - 7

■ Tracking section

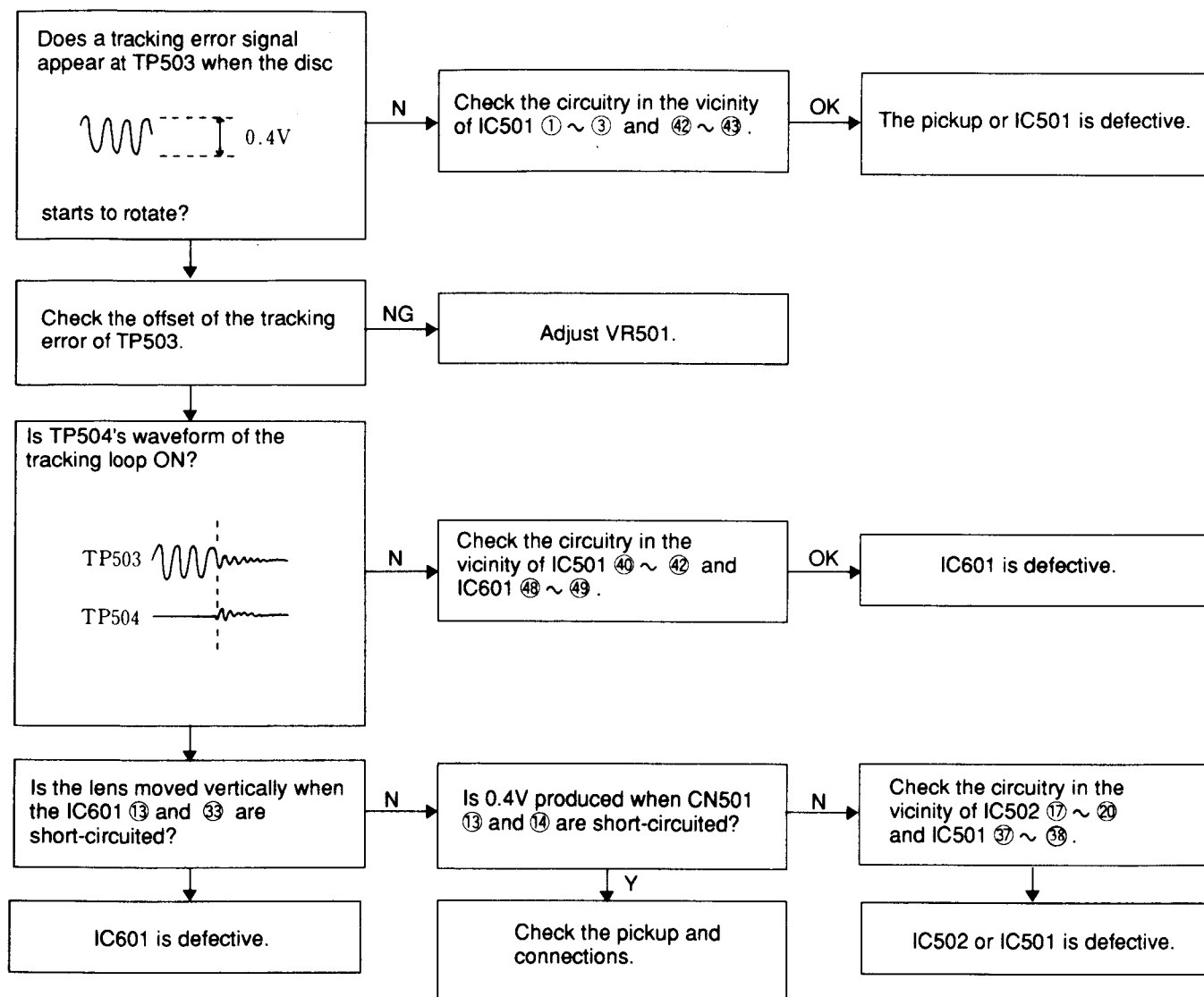


Fig. 3 - 8

4. Main Adjustments

■ Measuring instructions required for adjustment

1. Low-frequency oscillator(oscillation frequency 50Hz~20kHz, 0dB output with 600 Ω impedance)
2. Attenuator(600 Ω impedance)
3. Electronic voltmeter
4. Distortion meter
5. Torque gauge(cassette for CTG-N,
6. Wow & flutter meter
7. Frequency counter meter

◇ Test tape

● Playback tape

- VTT 712 or VT712 (tape speed ,wow flutter)
- VTT 724 or VT724 (reference level)
- VTT 739 or VT739 (playback frequency)
- VTT 703 or VT703 (10kHz azimuth)

● Recording tape

AC 224

● Power supply voltage

- Your local voltage
- AC 230 V / 50 Hz

■ Measuring instruments

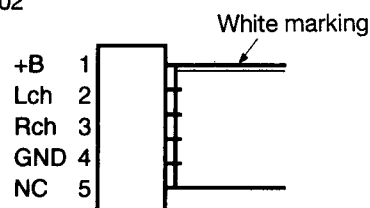
● Radio section

- ◇ FM :400Hz, 22.5kHz deviation
- ◇ FM STEREO : 1kHz,67.5kHz, deviation pilot signal 7.5kHz
- ◇ AM : 400Hz, 30%, modulation
- ◇ Reference output :
 - speaker output : 0dBs(0.755V)/3 Ω
 - H.phone output : - 10dBs(0.245V)/32 Ω
- ◇ Standard position of function switch
 - Function switch : FM
 - Bass boost : OFF
 - Main volume : Reference output

● Amplifier section

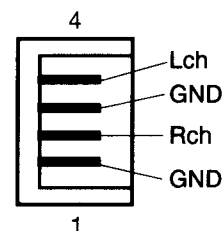
- ◇ Reference output :
 - speaker output 0dBs(0.755V)/3 Ω
 - H.phone output - 10dBs(0.245V)/32 Ω
- ◇ Standard position of function switch and volume
 - Function switch : TAPE
 - Mode switch : STEREO
 - Beat cut switch : Normal (1 position)
 - Tone : Maximum
- ◇ Reference input
 - Recording input level : -30 dBs
 - Input point : FW302

FW302



Output terminal : CN309

CN309



◇ Other item

- Standard recordingt current for recording :
 - Normal mode 33 μ A
- Bias oscillation frequency (Beat cut switch to normal) :
 - 75 kHz \pm 3 kHz
- Standard bias current for recording :
 - Normal mode 500 μ A

● CD section

- ◇ Test disc (JVC CTS - 1000)
(CRG - 1242)

■ Cassette Amplifier Section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	<ul style="list-style-type: none"> • Test tape: VTT703 (10 kHz) • Signal output terminal: PHONES (with 32 Ω load) 	<ol style="list-style-type: none"> 1. Play back the test tape VTT703 (10 kHz). 2. Adjust the head azimuth adjusting screw so that the phase difference between the R and L channels is minimized at an output level that is within ± 2 dB of the maximum output level of the deck A in the FWD and REV operations. After this adjustment, lock the head azimuth adjusting screw with screw sealant to cover more than a half of the screw head. 3. When the head azimuth is maladjusted, correct it with the head azimuth adjusting screw in the FWD and REV operations alternately. 	<ul style="list-style-type: none"> • Output level: Within ± 2 dB of maximum output level • Phase difference R and L channels: Minimum 	Head azimuth adjusting screw (To be used only after head replacement)
Tape speed and wow/flutter check and adjustment	<ul style="list-style-type: none"> • Test tape: VTT712 (3 kHz) • Signal output terminal: PHONES (with 32 Ω load) 	<ol style="list-style-type: none"> 1. Play back the test tape VTT712 (3 kHz) by the end portion. 2. Connect a frequency counter and check that it reads between 2940 and 3090 Hz. If not, adjust the frequency with the semi-fixed resistor VR303. 3. Check that the wow/flutter is within 0.38% (unweighted.) 	<ul style="list-style-type: none"> • 2940 to 3090 Hz • Within 0.38% (unweighted) 	<ul style="list-style-type: none"> • Tape speed: VR303 • Check only
PB frequency response check	<ul style="list-style-type: none"> • Test tape: VTT739 • Signal output terminal: PHONES (with 32 Ω load) 	Play back the test tape VTT739 while confirming that deviation between the 1 kHz signal and 10 kHz signal should be 0 ± 4 dB.	Deviation between 1 kHz and 10 kHz: 0 ± 4 dB	
Bias frequency check	<ul style="list-style-type: none"> • Tape: Normal • Signal output terminal: Speaker 	Set the BEAT CUT switch to the NORM-1, and check to see if the frequency at the measuring point is 75.5 ± 3 kHz. If not, adjust the frequency to be 75.5 ± 3 kHz. Then, change the setting of the BEAT CUT switch to the NORM-2 and NORM-3 positions to check to see if the measured frequency is equivalent to the standard value respectively.	Standard values <ul style="list-style-type: none"> • STD-1 position: 75.5 ± 3 kHz • STD-2 position: 72.5 ± 3 kHz • STD-3 position: 75.5 ± 3 kHz 	
REC and PB frequency response adjustment	<ul style="list-style-type: none"> • Test tape: AC224 • Signal input/output terminal: FW302/ PHONES 	Set the TAPE SELECT switch to the NORMAL position and BEAT CUT switch to the STANDARD-1, and record the reference 1 kHz (-30 dB) signal and 8 kHz signal alternately repeatedly. While playing back the recorded signals, check to see if the output level of the 8 kHz signal differs from that of the 1 kHz signal by within $+1 \pm 4$ dB.	Level difference between REC and PB: Within $+1 \pm 4$ dB	
REC and PB sensitivity check	<ul style="list-style-type: none"> • Test tape: VTT724 (1 kHz), AC224 • Signal input/output terminal: FW302/ PHONES 	Input the 1 kHz, -30 dBs signal through the input terminal FW302 and record it. While playing back the recorded signal, check to see if the playback output level at the measuring point is within 0 dBs as compared with the playback level of the test tape VTT724.	Within 0 dBs ± 3 dB	

■ Tuner Section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
IF adjustment FM tracking and MPX adjustment		<ul style="list-style-type: none"> Free from adjustment because fixed IF element is employed Free from adjustment because ceramic oscillator is employed Free from adjustment because fixed coil is employed 		
AM tracking adjustment	BAND selector switch: AM Standard mode setting: AUTO Measuring point: CN2 for AM output Signal input: Standard loop antenna	<ol style="list-style-type: none"> While receiving a 522 kHz signal from an AM signal generator to the tuner being set to the PRESET No. 1, check to see if the output of CN2 is maximum. When voltage at TP9 is higher than 5.0 V, adjust it to be 5.0 ± 0.1 V with L4. While receiving a 603 kHz signal from an AM signal generator to the tuner being set to the PRESET No. 3, maximize the output of CN2 with L3. While receiving a 1404 kHz signal from an AM signal generator to the tuner being set to the PRESET No. 4, maximize the output of CN2 with TC2. Repeat the above steps 3. and 4. to maximize the output of CN2. 	5.0 ± 0.1 V	L4 L3 TC2 L3, TC2

■ Location of adjusting position

● Cassette mechanism section

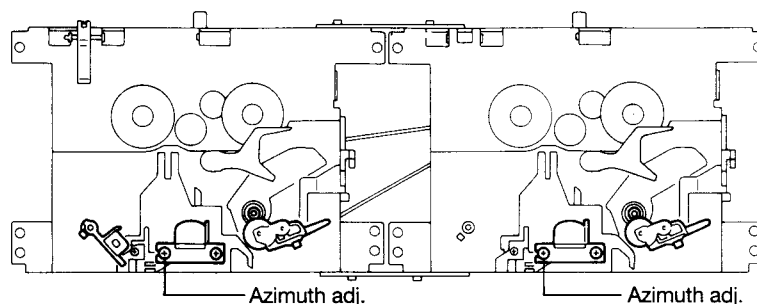


Fig. 4 - 1

● TUNER board assembly

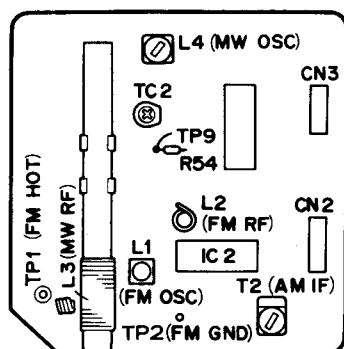


Fig. 4 - 2

● Main amplifier board assembly

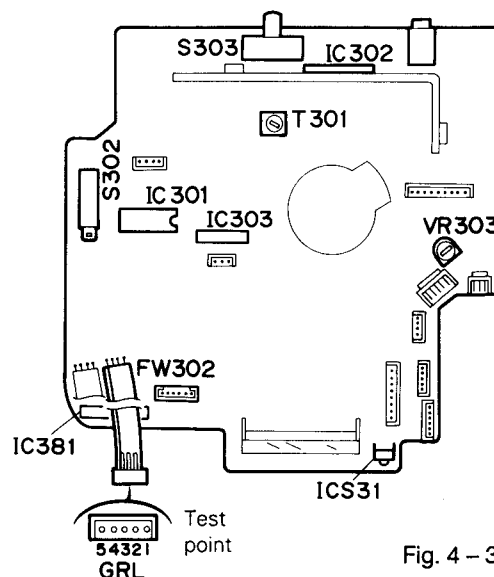
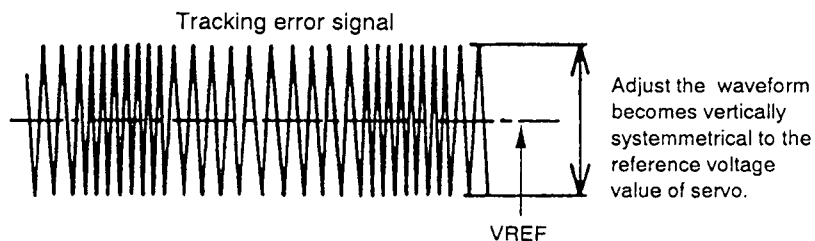


Fig. 4 - 3

■ CD player Section

Item	Conditions	Adjustment & Confirmation Methods	Stand. values	Adjust
Tracking offset adjustment	Test disc :CTS1000 Oscilloscope Note 1 Adjust VR501 so that the waveform becomes vertically symmetrical to the reference voltage value of servo. Note 2 The oscilloscope input should be DC – coupled. Note 3 VREF: Groud level on the oscilloscope.	① Connect TP503 (TE) and TP501 (VREF) respectively to the hot and ground sides of the oscilloscope. ② Replay the test disc CTS1000. ③ When TP504 and TP501 have been connected (Shorted) during replay, a tracking error signal will be emitted for about 3 sec. (Since the tracking error signal will be emitted at all times when the model with a test mode function is shifted to TEST mode, the adjustment can be performed more easily). ④ Since the waveform of tracking error signal displayed by the oscilloscope goes up and down when VR501 has been adjusted, adjust VR501 so that the center of the waveform amplitude becomes a reference voltage value of servo(VREF). ⑤ Repeat the steps ② ~ ④ until the center of the waveform amplitude of tracking error signal becomes the reference voltage value of servo (This step is not necessary in the case of the model with test mode function).	Adjust the center of waveform amplitude to the reference voltage value of servo (VREF).	VR501



■ Adjusting position (CD amplifier board)

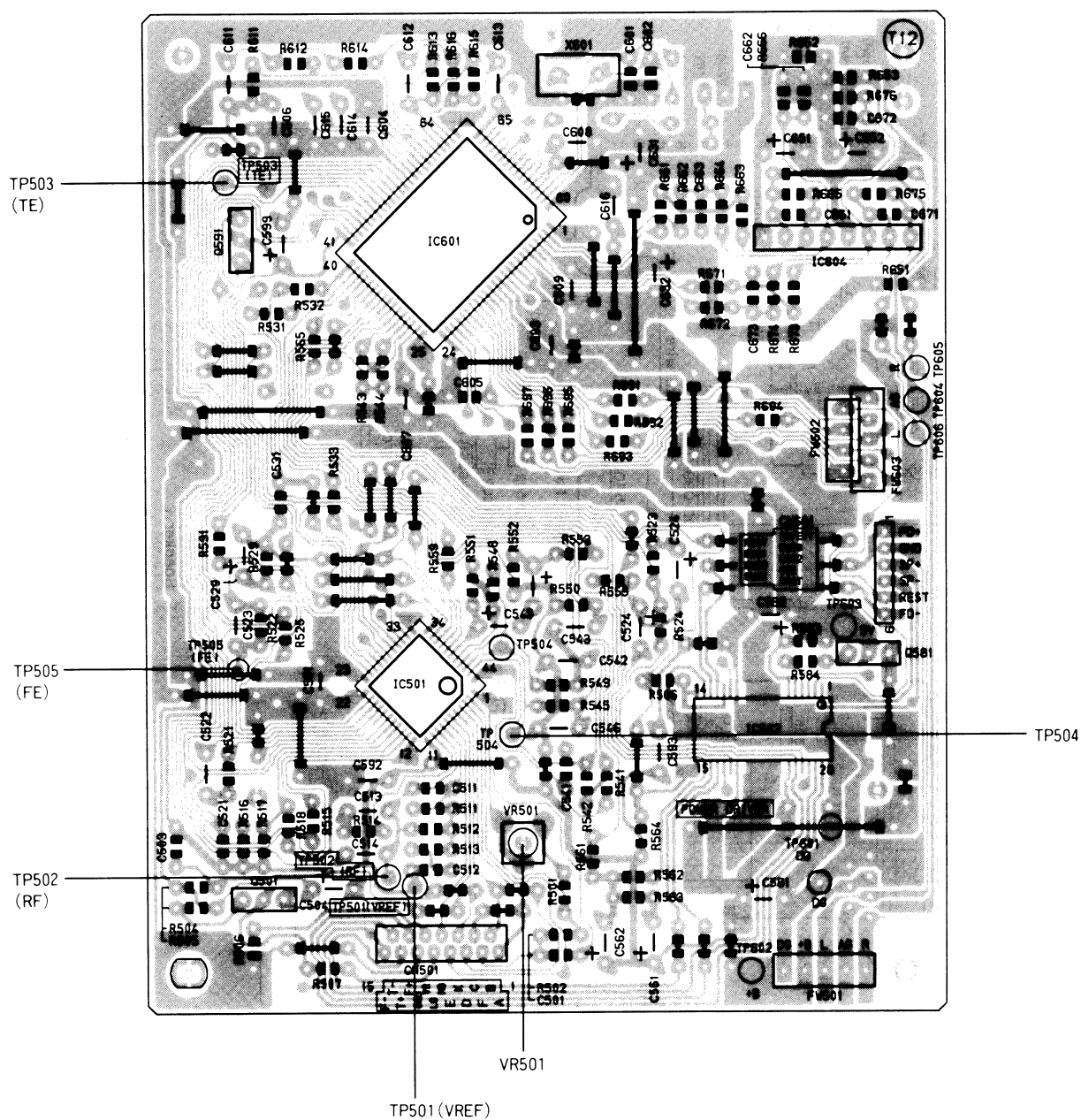


Fig. 4 - 4

5. Wiring Connections

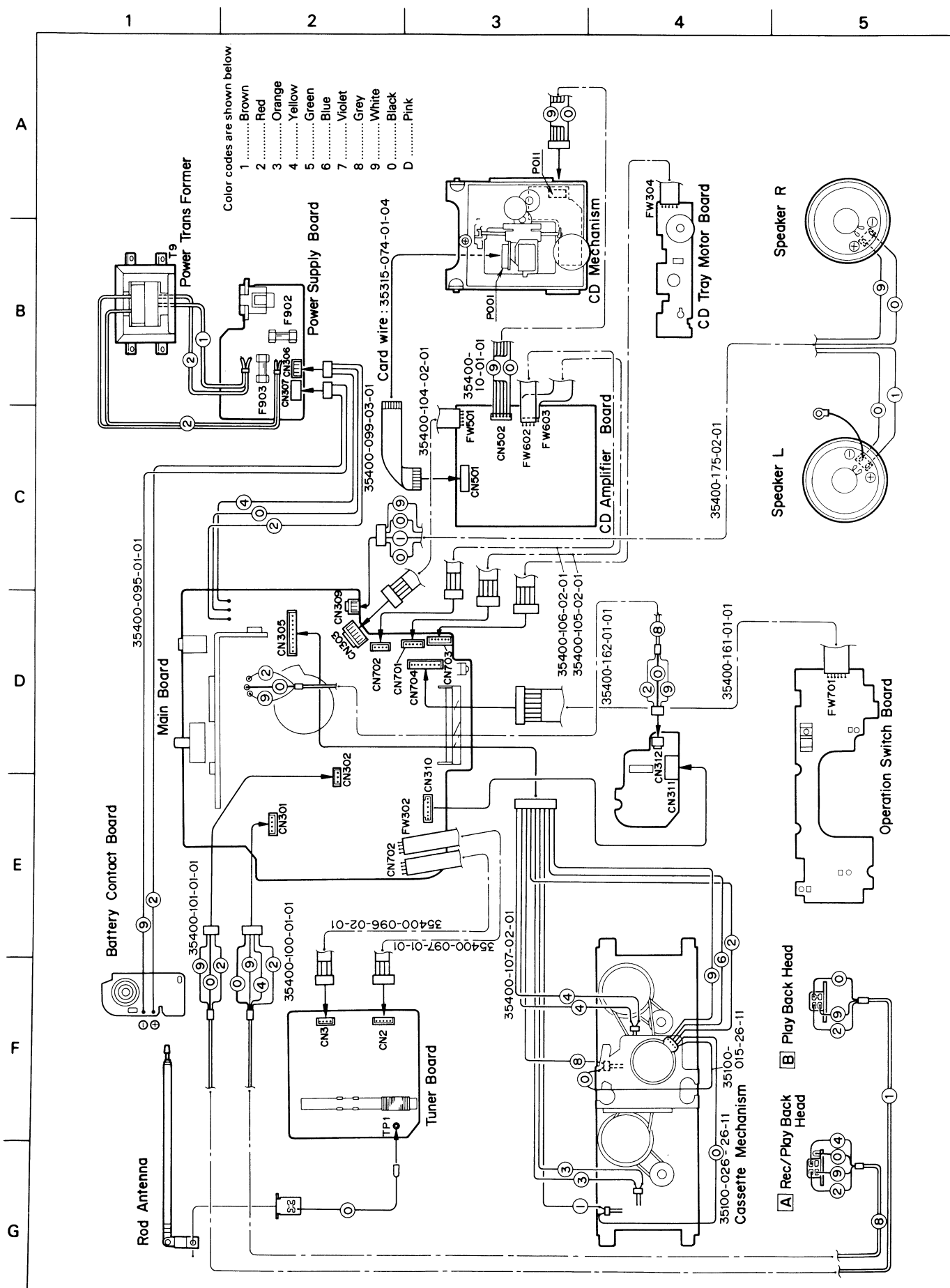
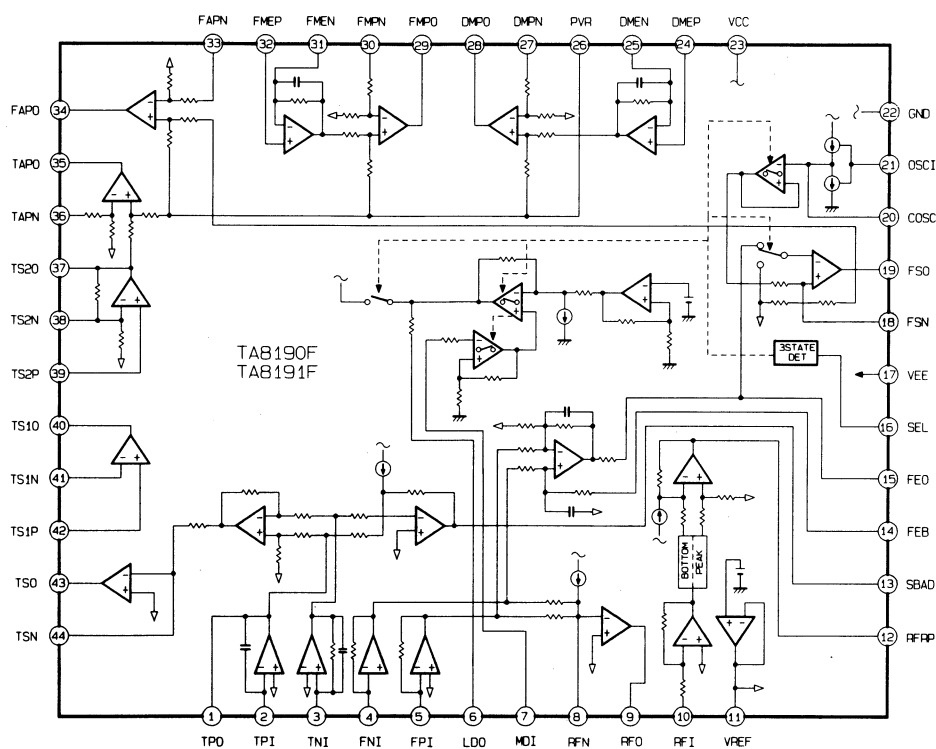


Fig. 5 - 1

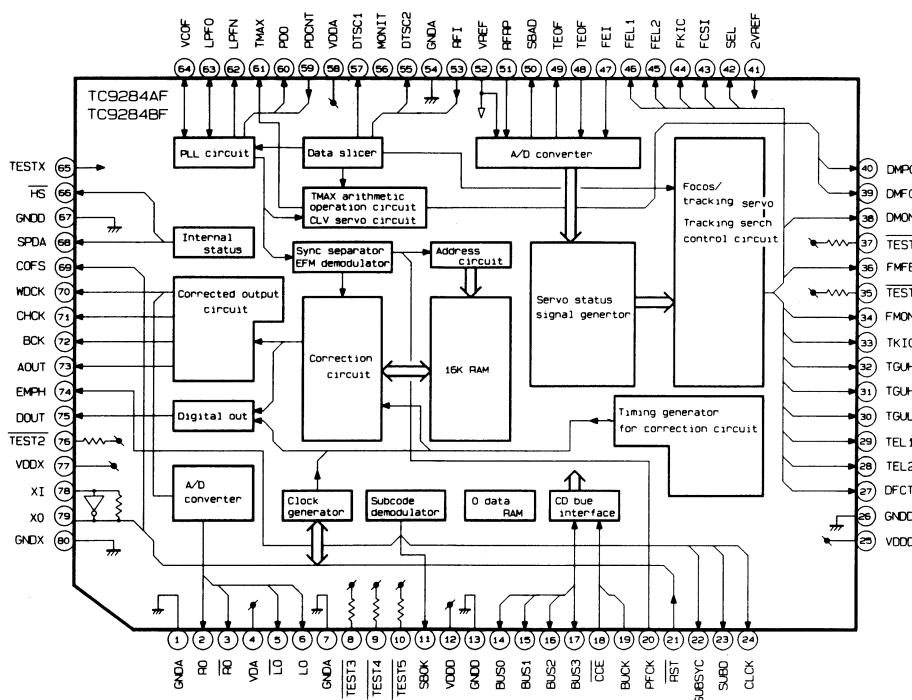
6. Block Diagram

■ Integrated circuit diagram

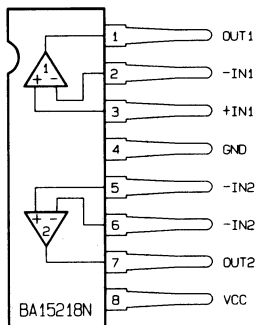
◆ IC501 (TA8191F) Servo



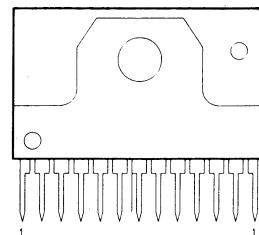
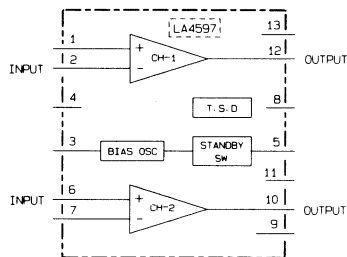
◆ IC601 (TC9284BF) Processor



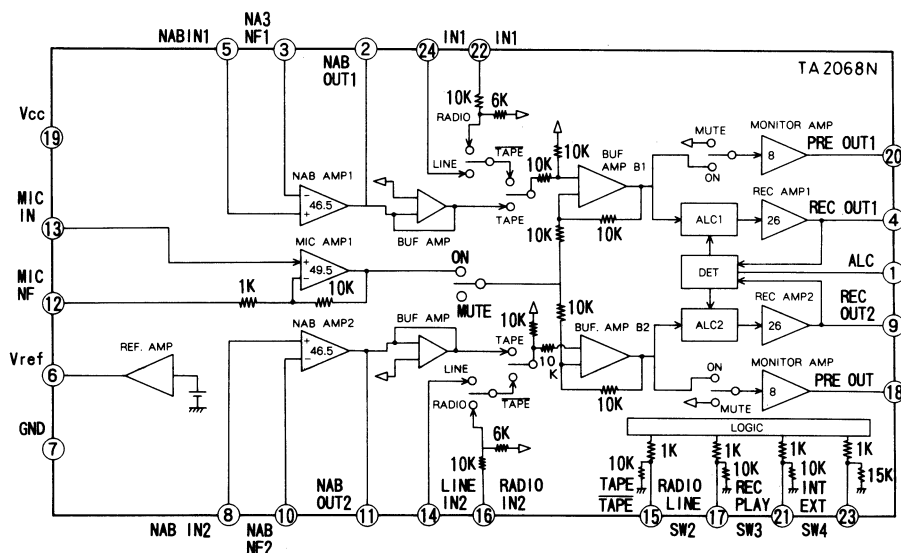
◆ IC604 (BA15218N) Low pass filter



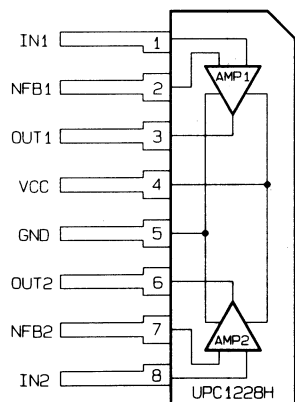
◆ IC302 (LA4597K) Power amp



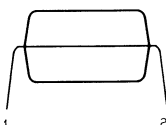
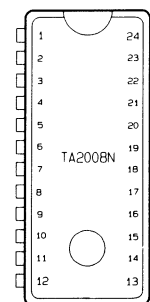
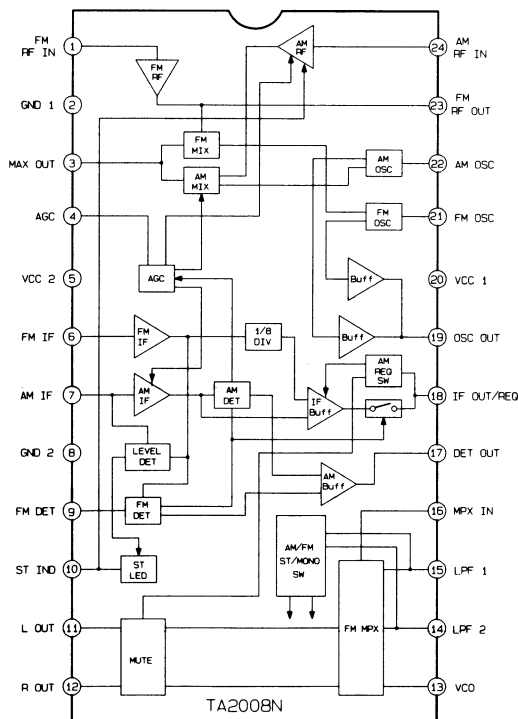
◆ IC301 (TA2068N) R/P amp/sw



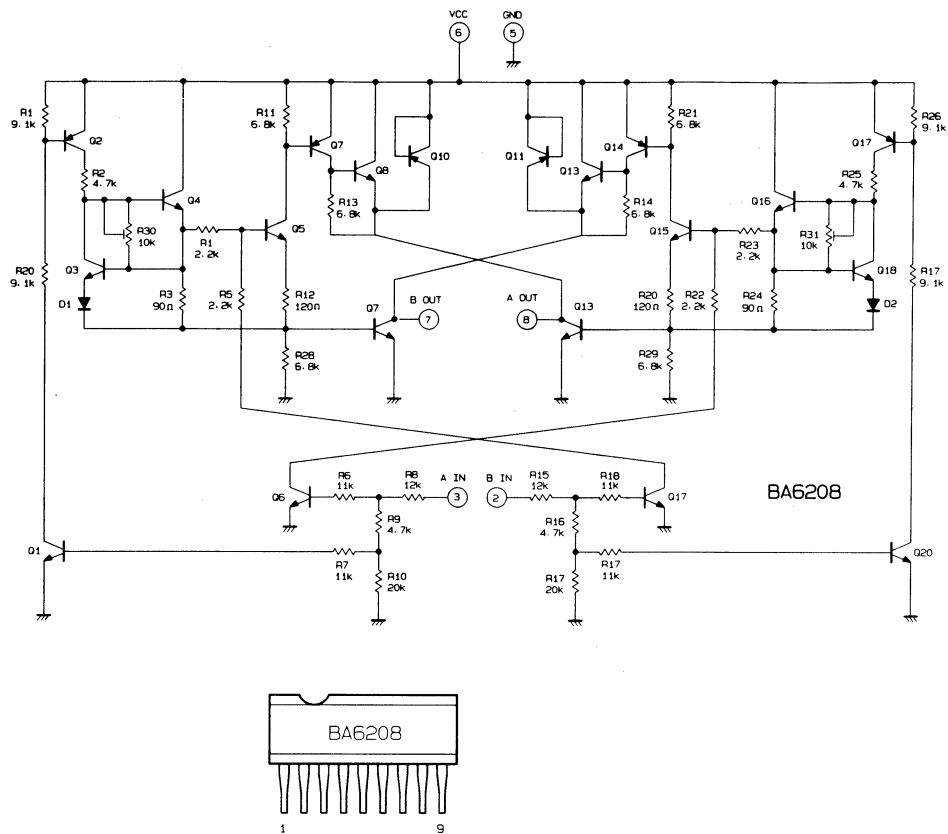
◆ IC303 (UPC1228HA) Head amp drive



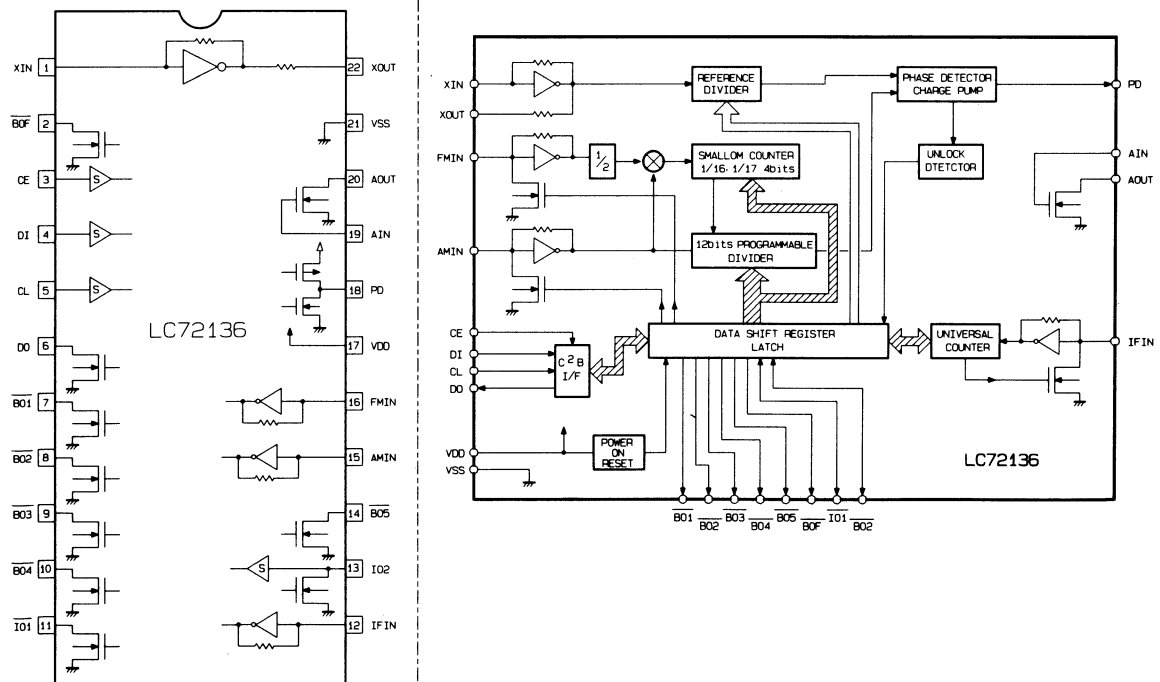
◆ IC2 (TA2008N) RF/IF/DET



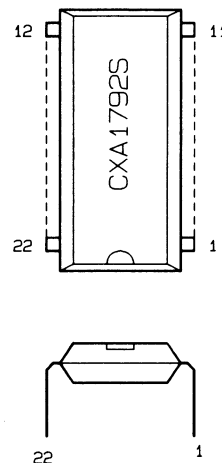
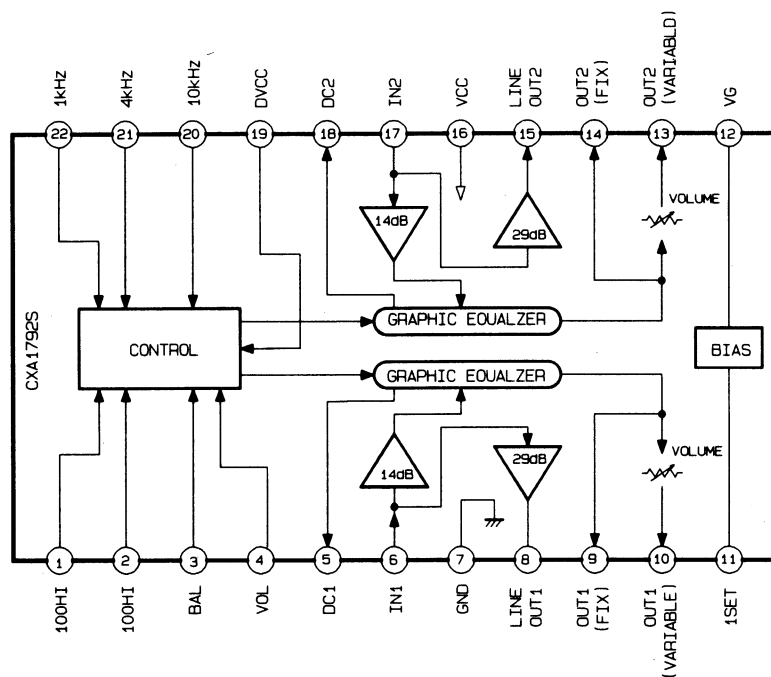
◆ IC802 (BA6208A) Tray motor



◆ IC3 (LC72136) PLL



◆ IC361 (CXA1792S) E. Volume



■ Signal diagram

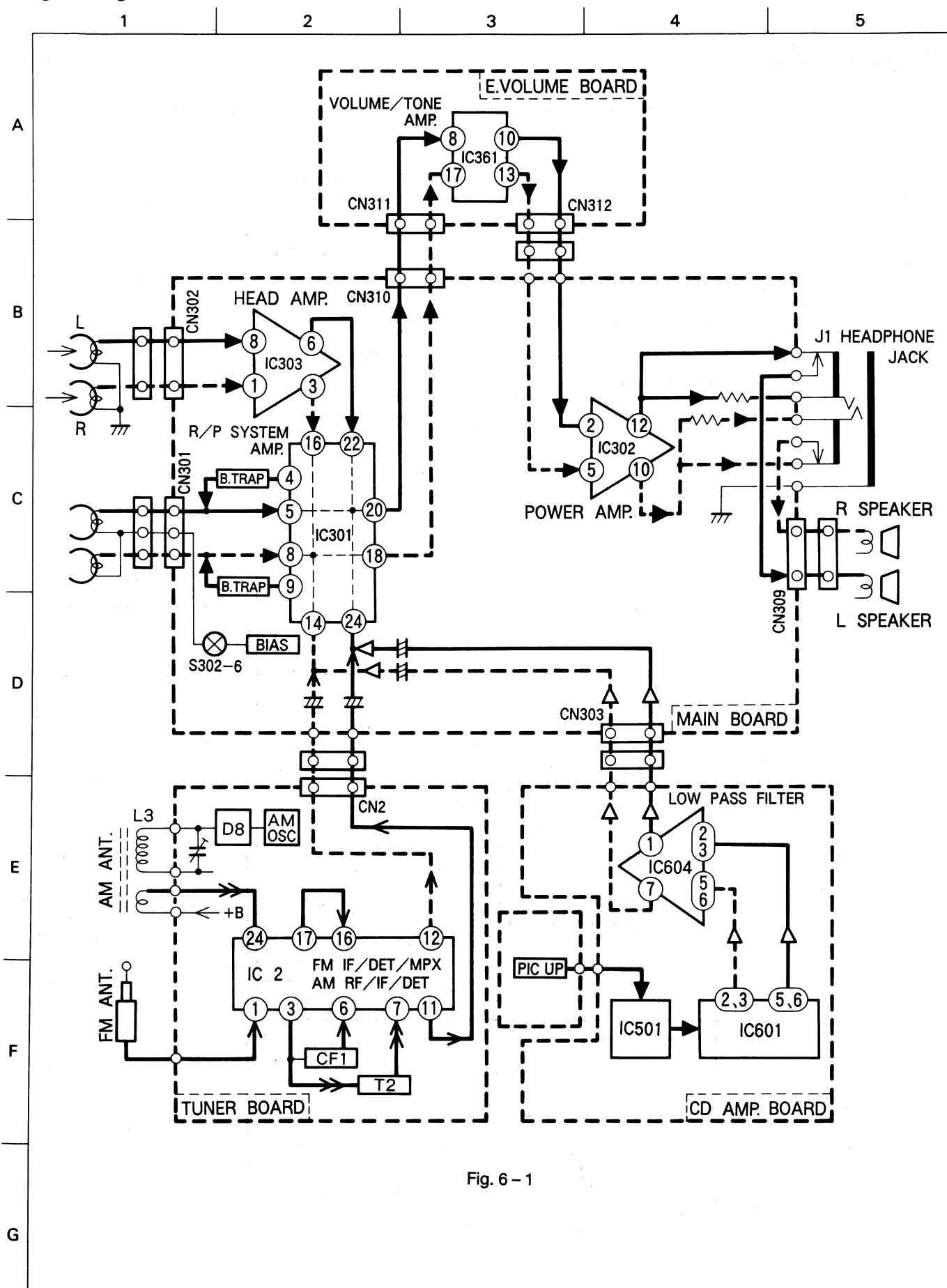


Fig. 6 - 1

7. Standard Schematic Diagram

■ Tuner circuit

A

B

C

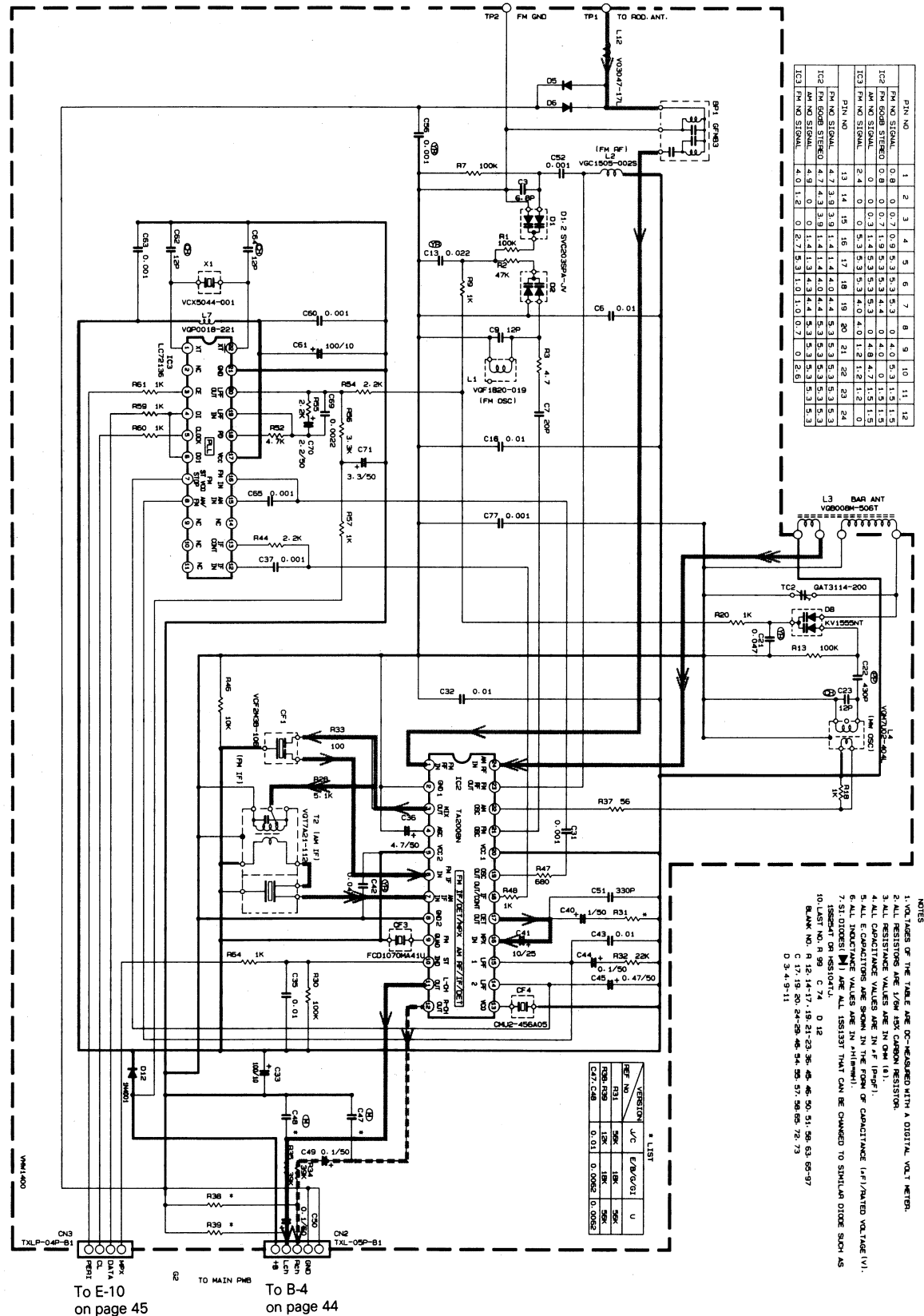
D

E

F

G

FM Radio signal line
AM Radio signal line
+B Line

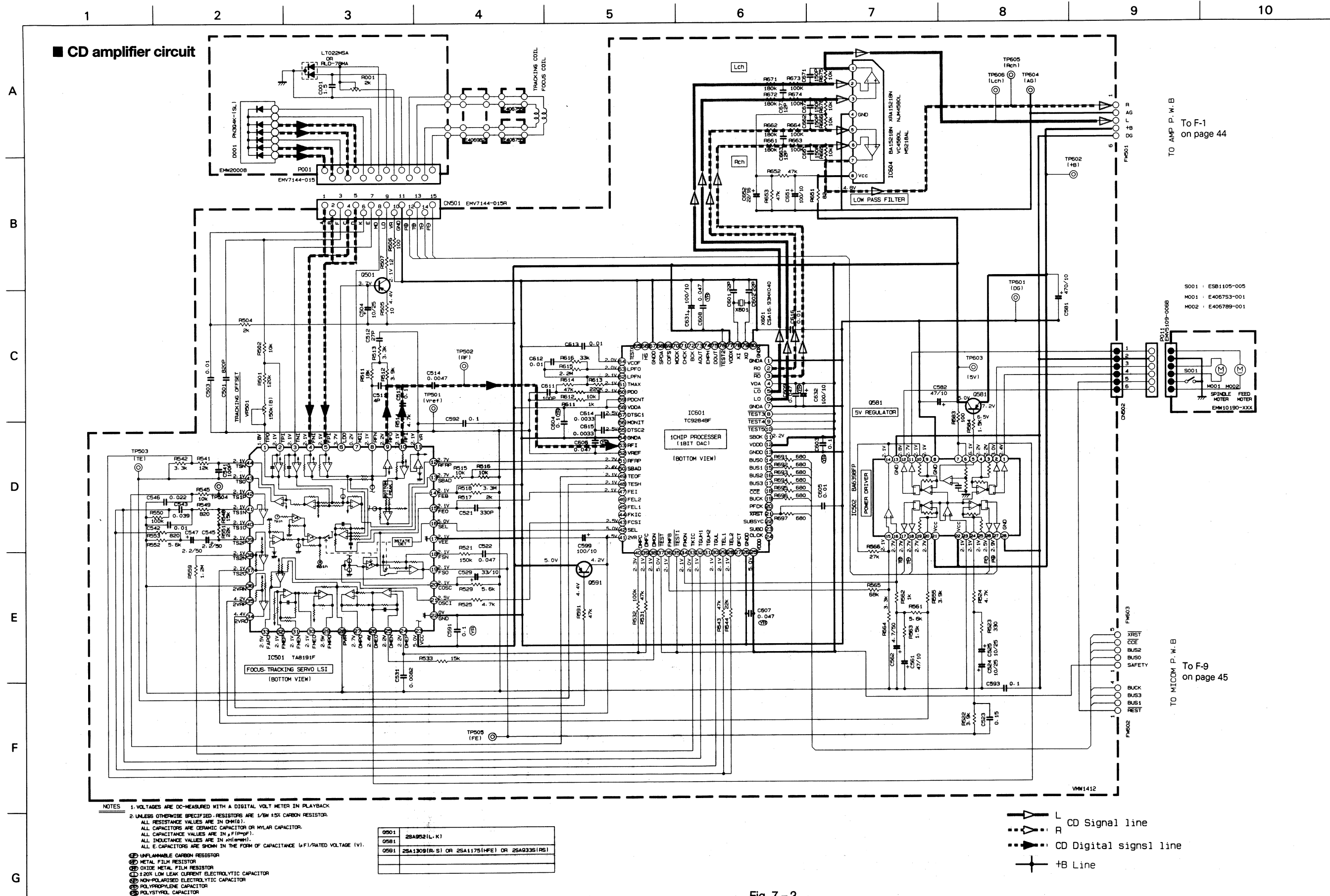


Pin No.	1	2	3	4	5	6	7	8	9	10	11	12
FM NO SIGNAL	0.0	0.0	0.7	0.9	5.3	5.3	0.4	0.0	5.3	1.5	1.5	
FM 500B STEREO	0.0	0.0	1.9	5.3	5.3	4.4	0.4	0.0	4.0	1.5	1.5	
FM NO SIGNAL	0.0	0.0	1.4	5.3	5.3	5.3	0.4	0.0	4.8	4.7	1.5	1.5
FM NO SIGNAL	2.4	0.0	5.3	5.3	5.3	4.0	0.0	1.2	1.2	1.2	0	
Pin No.	13	14	15	16	17	18	19	20	21	22	23	24
FM NO SIGNAL	4.7	3.9	3.9	1.4	1.4	4.0	4.4	5.3	5.3	5.3	5.3	5.3
FM 500B STEREO	4.7	4.3	3.9	1.4	1.4	4.0	4.4	5.3	5.3	5.3	5.3	5.3
AM NO SIGNAL	4.9	0.0	1.4	1.3	4.3	4.0	4.4	5.3	5.3	5.3	5.3	5.3
IC3 FM NO SIGNAL	4.0	1.2	0.0	2.7	5.3	1.0	1.0	0.7	0	2.6		

- NOTES
1. VOLTAGES OF THE TABLE ARE DC-MEASURED WITH A DIGITAL VOLT-METER.
 2. ALL RESISTORS ARE 1/8W 5% CARBON RESISTOR.
 3. ALL RESISTANCE VALUES ARE IN OHM (Ω).
 4. ALL CAPACITANCE VALUES ARE IN pF (pF).
 5. ALL CAPACITANCE VALUES ARE IN pF (pF).
 6. ALL CAPACITANCE VALUES ARE IN pF (pF).
 7. 51 DIODES (1) ARE ALL 1SS133 THAT CAN BE CHANGED TO SIMILAR TYPE SUCH AS 1SS133T OR H5104T.
 8. LAST NO. R 99 C 74 D 12
 9. R 12, 14, 17, 18, 21, 23, 36, 46, 48, 50, 51, 56, 63, 66, 97
 10. C 17, 19, 20, 24, 25, 46, 54, 55, 57, 58, 65, 72, 73
 11. D 3, 4, 9, 11

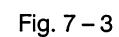
Note VDH519506TW

Fig. 7 - 1



Note : VDH519506CV

To F-1
on page 44S001 : ESB1105-005
M001 : E406753-001
M002 : E406799-001To F-9
on page 45



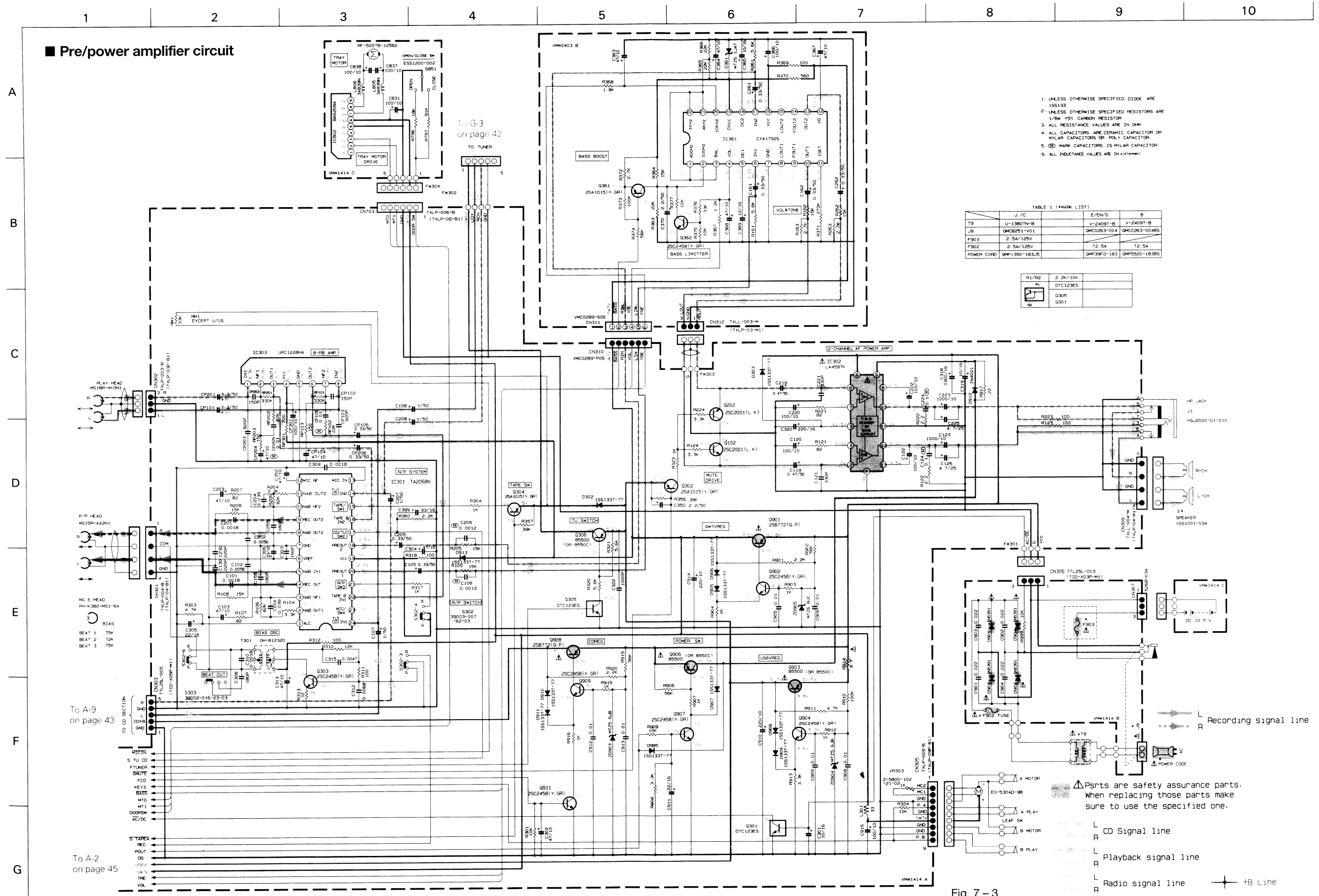
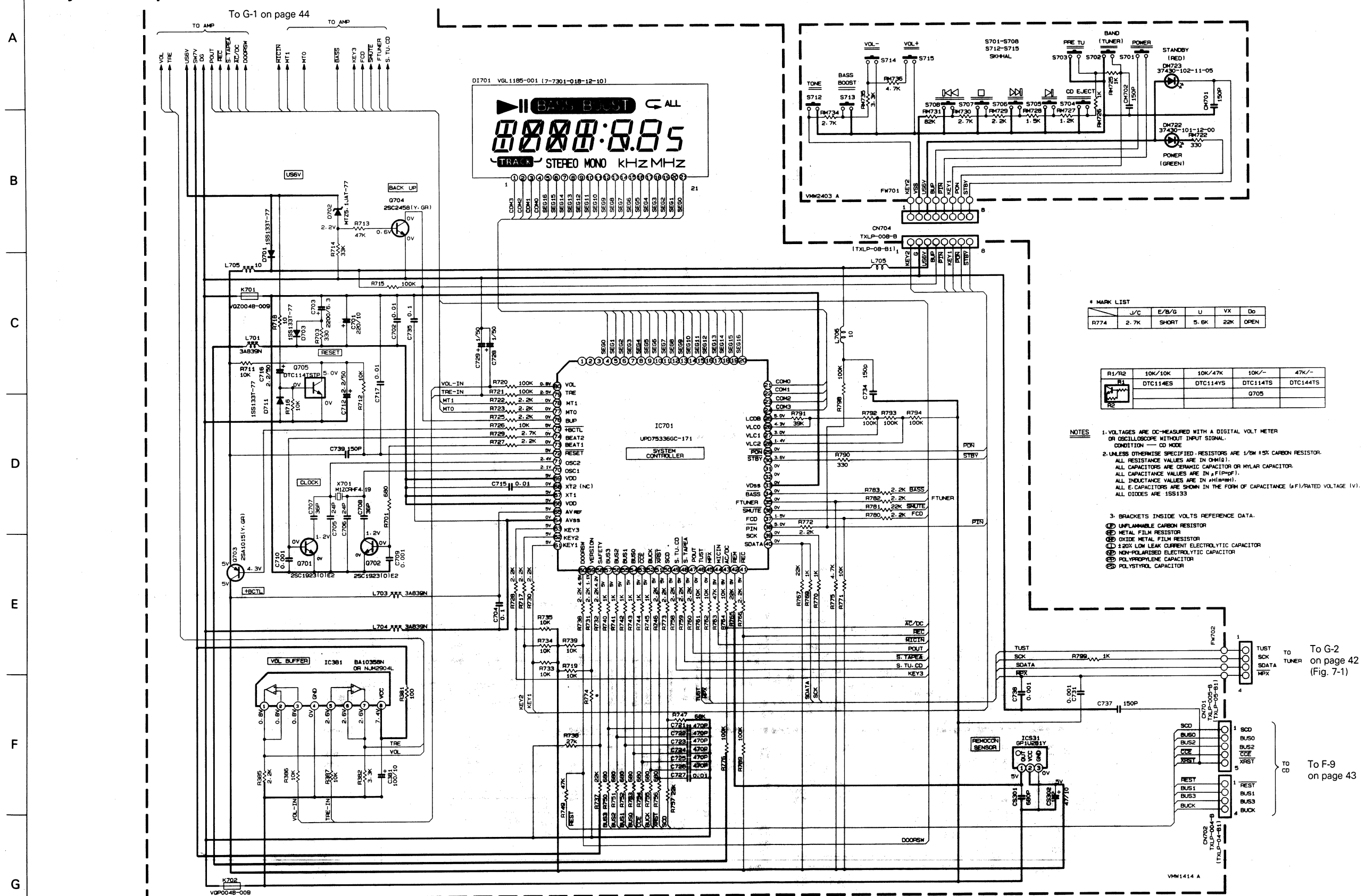


Fig. 7-3

■ System microprocessor circuit



Note : VDH5197006SV

Fig. 7-4

+B Line

8. Location of P.C. Board Parts and Parts List

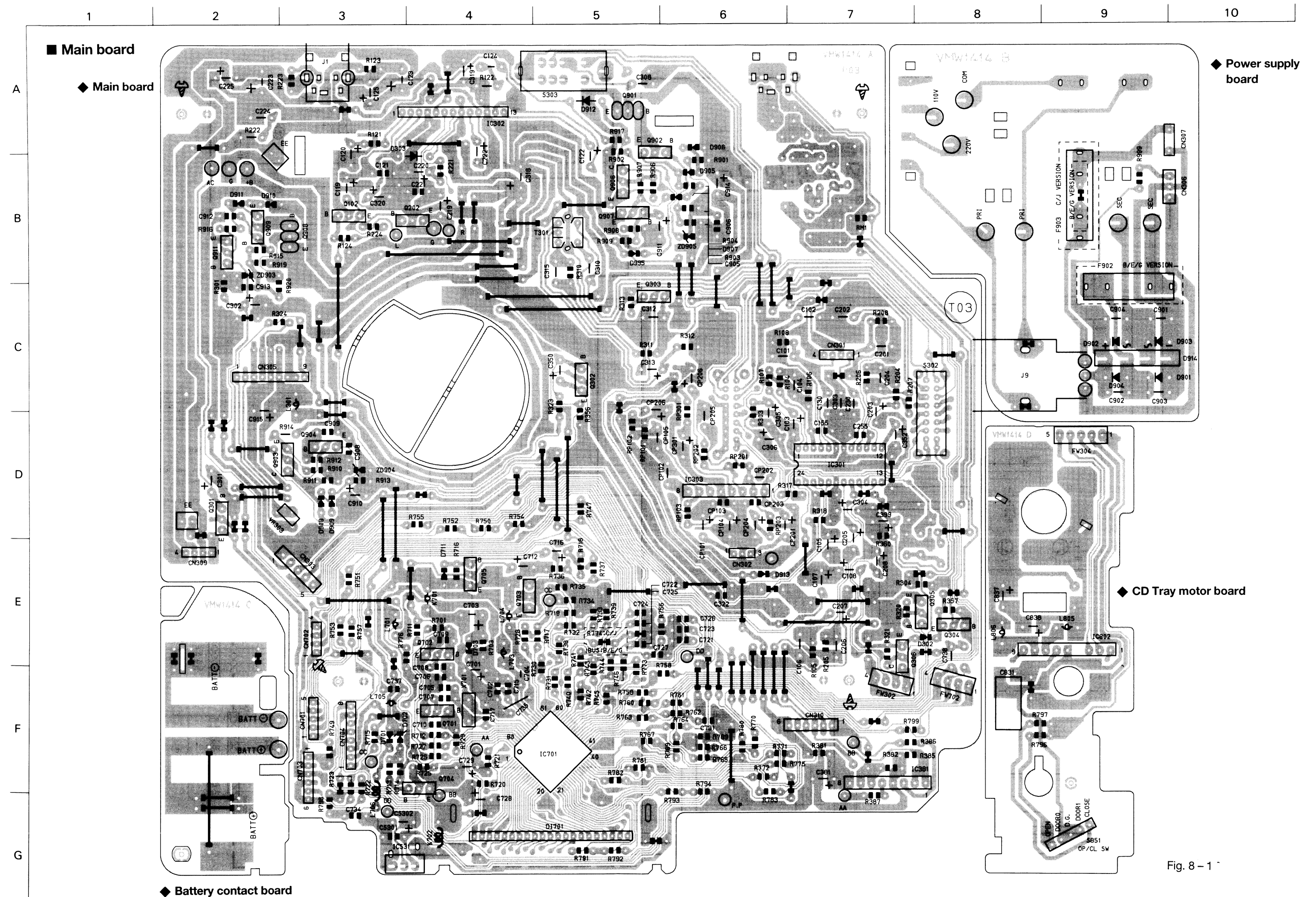


Fig. 8-1

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
R 758	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 759	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 760	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 761	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 762	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 763	QRD161J-473	CARBON RESISTOR	47K 5% 1/6W	
R 764	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 765	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R 766	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 767	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R 769	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 770	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 771	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 772	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 773	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 775	QRD161J-472	CARBON RESISTOR	4.7K 5% 1/6W	
R 776	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 780	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 781	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R 782	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 783	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 789	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 790	QRD161J-331	CARBON RESISTOR	330 5% 1/6W	
R 791	QRD161J-393	CARBON RESISTOR	39K 5% 1/6W	
R 792	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 793	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 794	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 796	QRD161J-183	CARBON RESISTOR	18K 5% 1/6W	
R 797	QRD161J-913	CARBON RESISTOR	91K 5% 1/6W	
R 798	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 799	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 901	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 902	QRD161J-563	CARBON RESISTOR	56K 5% 1/6W	
R 903	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 904	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 906	QRD161J-563	CARBON RESISTOR	56K 5% 1/6W	
R 907	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 908	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 909	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 910	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 911	QRD161J-472	CARBON RESISTOR	4.7K 5% 1/6W	
R 912	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 913	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 914	QRD167J-4R7	CARBON RESISTOR	4.7 5% 1/6W	
R 915	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 916	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 917	QRD161J-220	CARBON RESISTOR	22 5% 1/6W	
R 919	QRD161J-563	CARBON RESISTOR	56K 5% 1/6W	
R 920	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 999	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
RM 1	QRD161J-333	CARBON RESISTOR	EXCEPT U VER(MI	
RP101	QRD161J-334	CARBON RESISTOR	330K 5% 1/6W	
RP102	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
RP103	QRD161J-151	CARBON RESISTOR	150 5% 1/6W	
RP201	QRD161J-334	CARBON RESISTOR	330K 5% 1/6W	

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
R 356	QRD161J-393	CARBON RESISTOR	39K 5% 1/6W	
R 357	QRD161J-393	CARBON RESISTOR	39K 5% 1/6W	
R 360	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 381	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R 382	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 385	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 386	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 387	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 701	QRD161J-6M1	CARBON RESISTOR	680 5% 1/6W	
R 703	QRD161J-331	CARBON RESISTOR	330 5% 1/6W	
R 711	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 712	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 713	QRD161J-473	CARBON RESISTOR	47K 5% 1/6W	
R 714	QRD161J-333	CARBON RESISTOR	33K 5% 1/6W	
R 715	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 716	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 717	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 718	QRD161J-100	CARBON RESISTOR	10 5% 1/6W	
R 719	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 720	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 721	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R 722	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 723	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 725	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 726	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 727	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 728	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 729	QRD161J-272	CARBON RESISTOR	2.7K 5% 1/6W	
R 730	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 731	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 732	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 733	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 734	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 735	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 736	QRD161J-273	CARBON RESISTOR	27K 5% 1/6W	
R 737	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R 738	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 739	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 740	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 741	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 742	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 743	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 744	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 745	QRD161J-222	CARBON RESISTOR	1.0K 5% 1/6W	
R 746	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
R 747	QRD161J-683	CARBON RESISTOR	68K 5% 1/6W	
R 749	QRD161J-473	CARBON RESISTOR	47K 5% 1/6W	
R 750	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 751	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 752	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 753	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 754	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 755	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 756	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
R 757	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	

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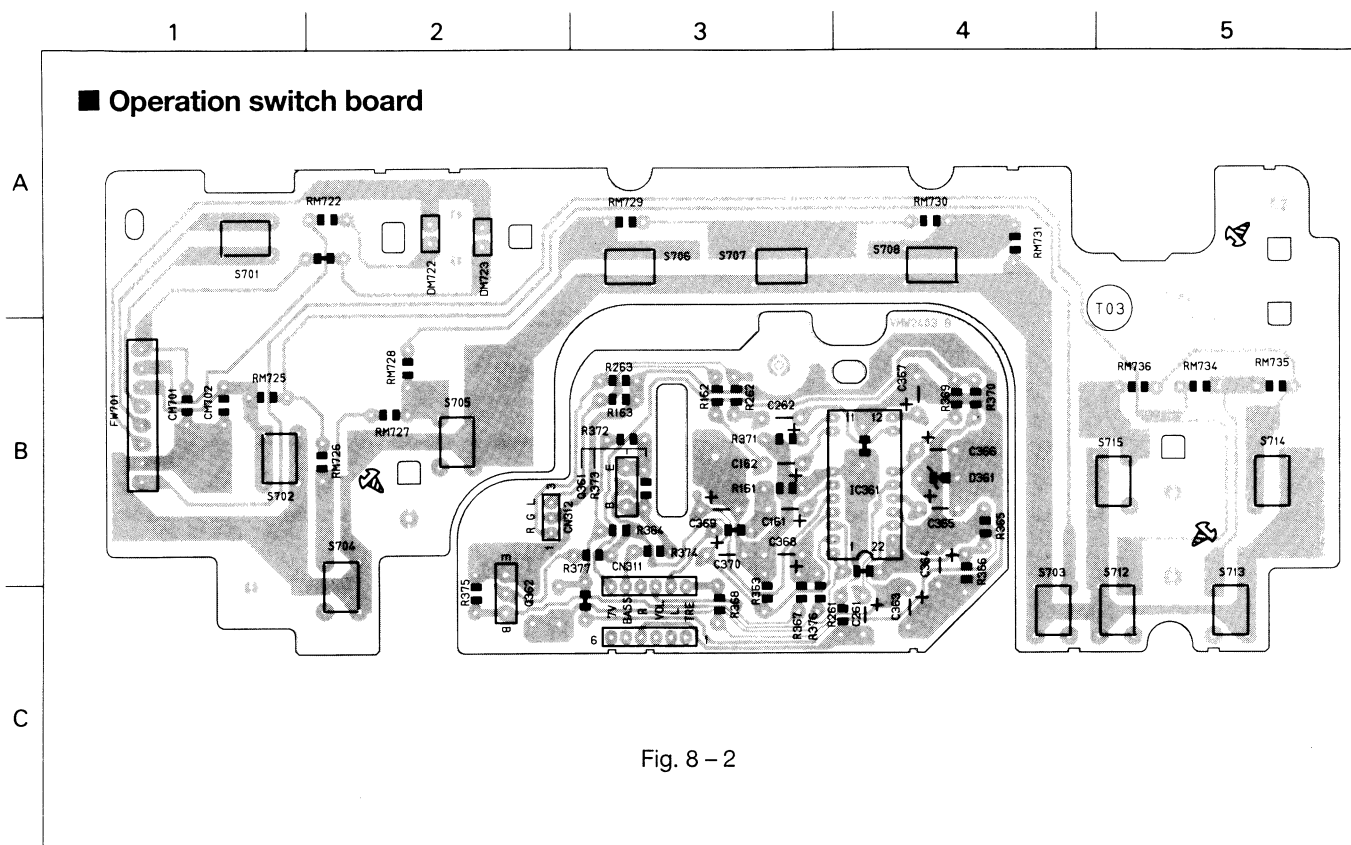


Fig. 8 - 2

● Operation switch board parts list

BLOCK NO. 02

A	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
C	161	QETC1HM-334Z	E.CAPACITOR	.33MF 20% 50V	
C	162	QETC1HM-334Z	E.CAPACITOR	.33MF 20% 50V	
C	261	QETC1HM-334Z	E.CAPACITOR	.33MF 20% 50V	
C	262	QETC1HM-334Z	E.CAPACITOR	.33MF 20% 50V	
C	363	QET41AM-476	E.CAPACITOR	47MF 20% 10V	
C	364	QEK41AM-476	E.CAPACITOR	47MF 20% 10V	
C	365	QEK41CM-106	E.CAPACITOR	10MF 20% 16V	
C	366	QEK61AM-107Z	E.CAPACITOR	100MF 20% 10V	
C	367	QET41AM-476	E.CAPACITOR	47MF 20% 10V	
C	368	QET41AM-476	E.CAPACITOR	47MF 20% 10V	
C	369	QET41CM-106	E.CAPACITOR	10MF 20% 16V	
C	370	QETC1HM-225ZM	E.CAPACITOR	2.2MF 20% 50V	
CM701		QCBBIHK-151Y	C.CAPACITOR	150PF 10% 50V	
CM702		QCBBIHK-151Y	C.CAPACITOR	150PF 10% 50V	
CM311		VMCQ289-S06	CONNECTOR	PWB CN	
CN312		TXLL-003-M	CONNECTOR	EVR OUT	
D	361	MT25.1JAT-77	ZENER DIODE		
DM722		37430-102-11-07	LED GREEN		
DM723		37430-101-12-00	LED RED		
IC361		CXA1792S	IC		
Q	361	2SA1015(Y,GR)	TRANSISTOR		
Q	362	2SC2458(Y,GR)	TRANSISTOR		
R	161	QRD167J-562	CARBON RESISTOR	5.6K 5% 1/6W	
R	162	QRD167J-562	CARBON RESISTOR	15K 5% 1/6W	
R	163	QRD161J-153	CARBON RESISTOR	2.7K 5% 1/6W	
R	163	QRD161J-272	CARBON RESISTOR	2.7K 5% 1/6W	
R	261	QRD167J-562	CARBON RESISTOR	5.6K 5% 1/6W	
R	262	QRD161J-153	CARBON RESISTOR	15K 5% 1/6W	
R	263	QRD161J-272	CARBON RESISTOR	2.7K 5% 1/6W	
R	363	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R	364	QRD161J-153	CARBON RESISTOR	15K 5% 1/6W	
R	365	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R	366	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
R	372	QRD161J-122	CARBON RESISTOR	1.2K 5% 1/6W	
R	368	QRD161J-182	CARBON RESISTOR	1.8K 5% 1/6W	
R	369	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R	370	QRD161J-561	CARBON RESISTOR	560 5% 1/6W	
R	371	QRD161J-274	CARBON RESISTOR	270K 5% 1/6W	
R	372	QRD161J-272	CARBON RESISTOR	2.7K 5% 1/6W	
R	373	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
R	374	QRD161J-563	CARBON RESISTOR	56K 5% 1/6W	
R	375	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R	376	QRD161J-333	CARBON RESISTOR	33K 5% 1/6W	
R	377	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
RM722		QRD161J-331	CARBON RESISTOE	330 5% 1/6W	
RM725		QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
RM726		QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
RM727		QRD161J-122	CARBON RESISTOR	1.2K 5% 1/6W	
RM728		QRD161J-152	CARBON RESISTOR	1.5K 5% 1/6W	
RM729		QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
RM730		QRD161J-272	CARBON RESISTOR	2.7K 5% 1/6W	
RM731		QRD161J-823	CARBON RESISTOR	82K 5% 1/6W	
RM734		QRD161J-272	CARBON RESISTOR	2.7K 5% 1/6W	
RM735		QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
RM736		QRD161J-472	CARBON RESISTOR	4.7K 5% 1/6W	
S	701	SKH4L	TACT SWITCH		
S	702	SKH4L	TACT SWITCH		
S	703	SKH4L	TACT SWITCH		
S	704	SKH4L	TACT SWITCH		
S	705	SKH4L	TACT SWITCH		
S	706	SKH4L	TACT SWITCH		
S	707	SKH4L	TACT SWITCH		
S	708	SKH4L	TACT SWITCH		
S	712	SKH4L	TACT SWITCH		
S	713	SKH4L	TACT SWITCH		
S	714	SKH4L	TACT SWITCH		
S	715	SKH4L	TACT SWITCH		

■ Tuner board

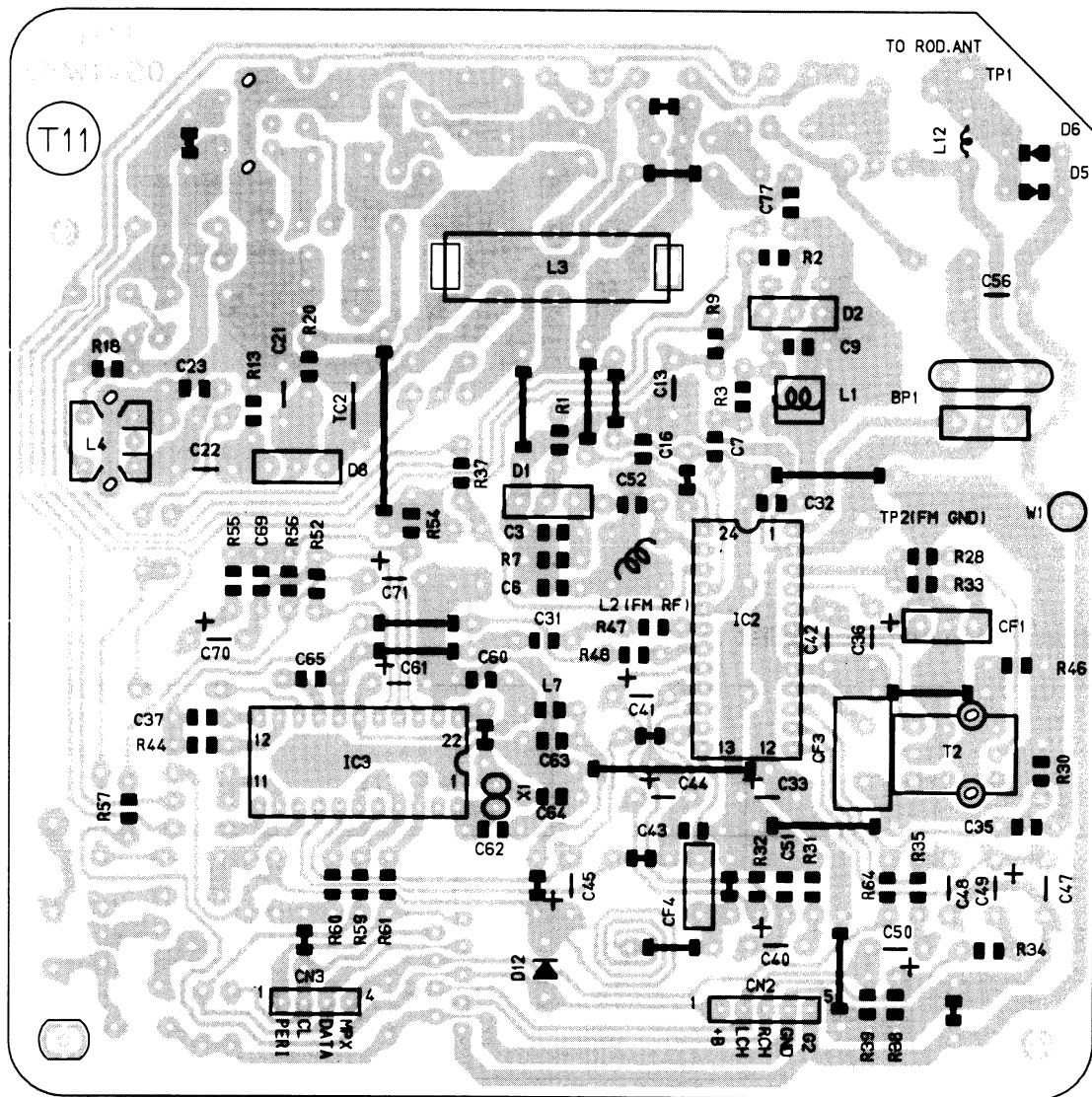


Fig. 8 - 3

● Tuner board parts list

BLOCK NO. 03					BLOCK NO. 03				
REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
BP 1	VBP4M3B-007Z	BAND PASS FILTE			L 4	VQM7U02-404	OSC COIL (MW)		
C 3	QCS81HK-688Y	C.CAPACITOR	6.8PF 10% 50V		L 7	VQP0018-221	INDUCTOR		
C 6	QCV81CN-103Y	C.CAPACITOR	.010MF 30% 16V		L 12	VQ3047-17	CARBON RESISTOR	100K 5% 1/6W	
C 7	QCS11HJ-200	C.CAPACITOR	20PF 5% 50V		R 1	QRD161J-104	CARBON RESISTOR	47K 5% 1/6W	
C 9	QCS11HJ-120	C.CAPACITOR	12PF 5% 50V		R 2	QRD161J-473	CARBON RESISTOR	4.7 5% 1/6W	
C 13	QCC11EM-223V	C.CAPACITOR	.022MF 20% 25V		R 3	QRD167J-4R7	CARBON RESISTOR	100K 5% 1/6W	
C 16	QCV81CN-103Y	C.CAPACITOR	.010MF 30% 16V		R 7	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
C 22	QCC11EM-473V	C.CAPACITOR	.047MF 20% 25V		R 9	QRD161J-102	CARBON RESISTOR	100K 5% 1/6W	
C 22	QF32AJ-431ZN	PP CAPACITOR	430PF 5% 100V		R 13	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
C 23	QCT30CH-120Y	C.CAPACITOR	12PF 5% 50V		R 18	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 31	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		R 20	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 32	QCV81CN-103Y	C.CAPACITOR	.010MF 30% 16V		R 28	QRD161J-512	CARBON RESISTOR	5.1K 5% 1/6W	
C 33	QET41AN-107	E.CAPACITOR	100MF 20% 10V		R 30	QRD161J-104	CARBON RESISTOR	100K 5% 1/6W	
C 35	QCV81CN-103Y	C.CAPACITOR	.010MF 30% 16V		R 31	QRD161J-183	CARBON RESISTOR	18K 5% 1/6W	
C 36	QET41HM-475	E.CAPACITOR	4.7MF 20% 50V		R 32	QRD161J-223	CARBON RESISTOR	22K 5% 1/6W	
C 37	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		R 33	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
C 40	QET41HM-105	E.CAPACITOR	1.0MF 20% 50V		R 34	QRD161J-393	CARBON RESISTOR	39K 5% 1/6W	
C 41	QET41CN-106	E.CAPACITOR	10MF 20% 16V		R 35	QRD161J-393	CARBON RESISTOR	39K 5% 1/6W	
C 42	QCC11EM-473V	C.CAPACITOR	.047MF 20% 25V		R 37	QRD161J-560	CARBON RESISTOR	56 5% 1/6W	
C 43	QCV81CN-103Y	C.CAPACITOR	.010MF 30% 16V		R 38	QRD161J-183	CARBON RESISTOR	18K 5% 1/6W	
C 44	QETC1HM-104Z	E.CAPACITOR	.10MF 20% 50V		R 39	QRD161J-183	CARBON RESISTOR	18K 5% 1/6W	
C 45	QET41HM-474	E.CAPACITOR	.47MF 20% 50V		R 44	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
C 47	QFN41HJ-682	M CAPACITOR	6800PF 5% 50V		R 46	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
C 48	QFN41HJ-682	M CAPACITOR	6800PF 5% 50V		R 47	QRD161J-681	CARBON RESISTOR	680 5% 1/6W	
C 49	QETC1HM-104Z	E.CAPACITOR	.10MF 20% 50V		R 48	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 50	QETC1HM-104Z	E.CAPACITOR	.10MF 20% 50V		R 52	QRD161J-472	CARBON RESISTOR	4.7K 5% 1/6W	
C 51	QCB81HK-331Y	C.CAPACITOR	330PF 10% 50V		R 54	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
C 52	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		R 55	QRD161J-222	CARBON RESISTOR	2.2K 5% 1/6W	
C 56	QCV41HK-102	C.CAPACITOR	1000PF 10% 50V		R 56	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
C 60	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		R 57	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 61	QET41AN-107	E.CAPACITOR	100MF 20% 10V		R 59	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 62	QCT30CH-120Y	C.CAPACITOR	12PF 5% 50V		R 60	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 63	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		R 61	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 64	QCT30CH-120Y	C.CAPACITOR	12PF 5% 50V		R 64	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
C 65	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		T 2	VQT7A21-112	IFT		
C 69	QCB81CN-222Y	C.CAPACITOR	2200PF 20% 16V		TC 2	GAT3114-200Z	T CAPACITOR		
C 70	QETC1HM-225ZM	E.CAPACITOR	2.2MF 20% 50V		TP 1	VMZ0015-002	PIN SOCKET		
C 71	QETC1HM-335Z	E.CAPACITOR	3.3MF 20% 50V		TP 2	VMZ0015-002	PIN SOCKET		
C 77	QCB81HK-102Y	C.CAPACITOR	1000PF 10% 50V		X 1	VCX5044-001	CRYSTAL		
CF 1	VCF2M3B-106	C. FILTER							
CF 3	VCF1Z2Z-117Z	C. FILTER							
CF 4	CMU2-456A05	CERA LOCK							
CN 2	TXLP-005-B	CONNECTOR							
CN 3	TXLP-004-B	CONNECTOR							
D 1	SVZ203SPA-AB-AL	VARI. CAP							
D 2	SVZ203SPA-AB-AL	VARI. CAP							
D 5	1SS133	SI DIODE							
D 6	1SS133	SI DIODE							
D 8	KV1555NT	VARI. CAP							
D 12	1N4001	DIODE							
IC 2	TA2008N	IC							
IC 3	LC72136	IC							
L 1	VGF1B20-019	OSC COIL							
L 2	VQC1505-002	RF COIL							
L 3	VQB008M-506	BAR ANTENNA							

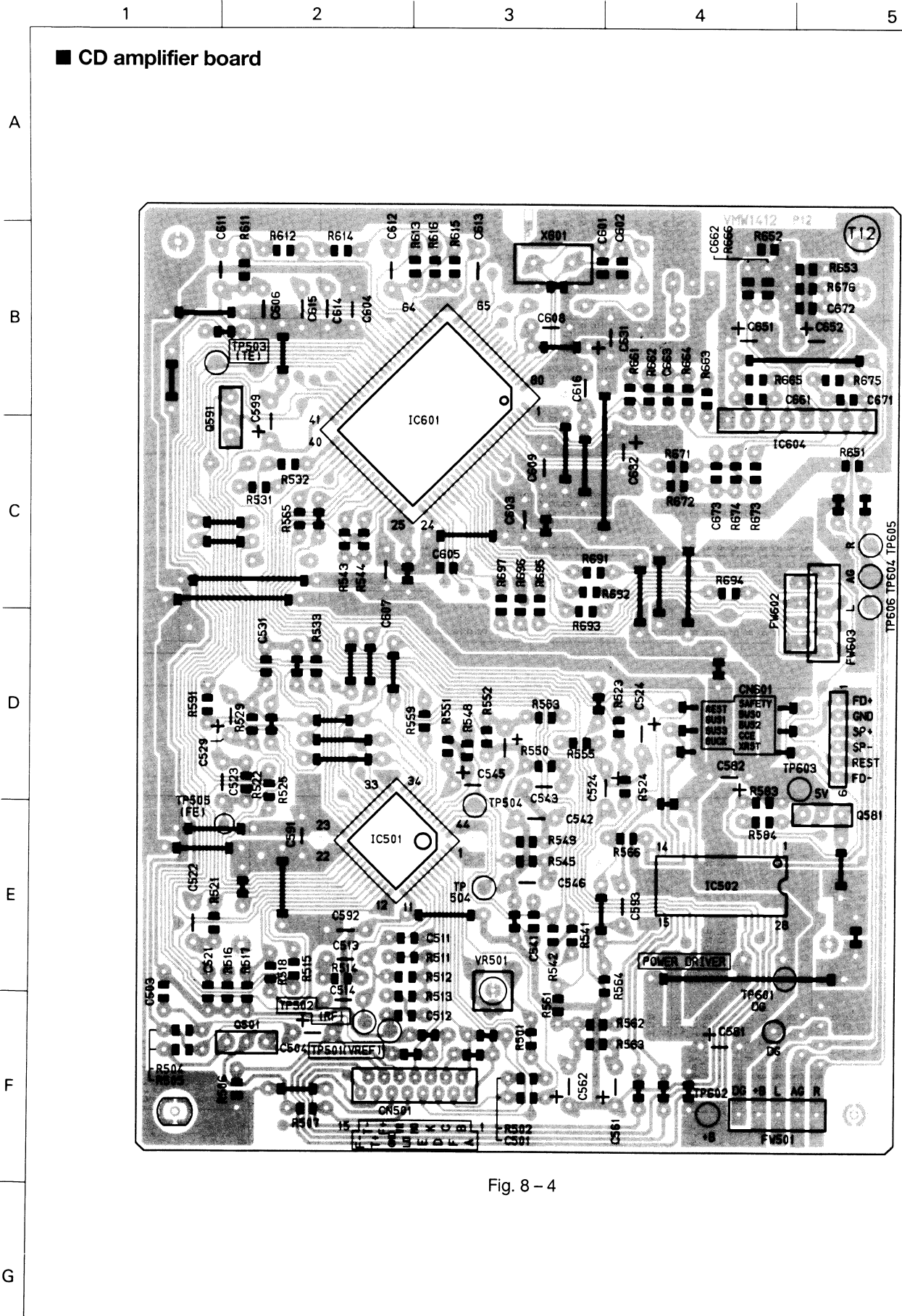


Fig. 8 - 4

● Main board parts list

BLOCK NO. 01						BLOCK NO. 01					
A	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX	A	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 101	QFN41HJ-182	M-CAPACITOR	1800PF 5% 50V			C 702	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 102	QFN81HJ-562	M-CAPACITOR	5600PF 5% 50V			C 703	QETM0JM-228	E-CAPACITOR	2200MF 20% 6.3V	
	C 103	QET41AM-476	E-CAPACITOR	47MF 20% 10V			C 704	QFV41HJ-104ZM	TF CAPACITOR	10MF 5% 50V	
	C 104	QFV41HJ-393ZM	FILM CAPACITOR	.039MF 5% 50V			C 705	QCS11HJ-240	C-CAPACITOR	24PF 5% 50V	
	C 105	QETC1HM-334Z	E-CAPACITOR	.33MF 20% 50V			C 706	QCS11HJ-240	C-CAPACITOR	24PF 5% 50V	
	C 106	C1-PARTS848694	M-CAPACITOR	1200PF 5% 50V			C 707	QCS11HJ-360	C-CAPACITOR	36PF 5% 50V	
	C 107	QET41HM-105	E-CAPACITOR	1.0MF 20% 50V			C 708	QCS11HJ-360	C-CAPACITOR	36PF 5% 50V	
	C 108	QET41HM-105	E-CAPACITOR	1.0MF 20% 50V			C 709	QCB81HK-102Y	C-CAPACITOR	1000PF 10% 50V	
	C 119	QET41HM-474	E-CAPACITOR	.47MF 20% 50V			C 710	QCB81HK-102Y	C-CAPACITOR	1000PF 10% 50V	
	C 120	QET41AM-107	E-CAPACITOR	100MF 20% 10V			C 712	QETC1HM-225ZM	E-CAPACITOR	2.2MF 20% 50V	
	C 121	QCB81HK-331Y	E-CAPACITOR	330PF 10% 50V			C 715	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 122	QET41AM-107	E-CAPACITOR	100MF 20% 10V			C 716	QETC1HM-225ZM	E-CAPACITOR	2.2MF 20% 50V	
	C 123	QET41AM-108	E-CAPACITOR	100MF 20% 10V			C 717	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 124	QFV41HJ-104ZM	FILM CAPACITOR	.10MF 5% 50V			C 721	QCB81HK-471Y	C-CAPACITOR	470PF 10% 50V	
	C 125	QER41EM-475VM	E-CAPACITOR	4.7MF 20% 25V			C 722	QCB81HK-471Y	C-CAPACITOR	470PF 10% 50V	
	C 130	QCS11HJ-221	C-CAPACITOR	220PF 5% 50V			C 723	QCB81HK-471Y	C-CAPACITOR	470PF 10% 50V	
	C 155	QCB81HK-181Y	C-CAPACITOR	180PF 10% 50V			C 724	QCB81HK-471Y	C-CAPACITOR	470PF 10% 50V	
	C 201	QFN41HJ-182	M-CAPACITOR	1800PF 5% 50V			C 725	QCB81HK-471Y	C-CAPACITOR	470PF 10% 50V	
	C 202	QFN81HJ-562	M-CAPACITOR	5600PF 5% 50V			C 726	QCB81HK-471Y	C-CAPACITOR	470PF 10% 50V	
	C 203	QET41AM-476	E-CAPACITOR	47MF 20% 10V			C 727	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 204	QFV41HJ-393ZM	FILM CAPACITOR	.039MF 5% 50V			C 728	QET41HM-105	E-CAPACITOR	1.0MF 20% 50V	
	C 205	QETC1HM-334Z	E-CAPACITOR	.33MF 20% 50V			C 729	QET41HM-105	E-CAPACITOR	1.0MF 20% 50V	
	C 206	C1-PARTS848694	M-CAPACITOR	1200PF 5% 50V			C 731	QCB81HK-102Y	C-CAPACITOR	1000PF 10% 50V	
	C 207	QET41HM-105	E-CAPACITOR	1.0MF 20% 50V			C 734	QCB81HK-151Y	C-CAPACITOR	150PF 10% 50V	
	C 208	QET41HM-105	E-CAPACITOR	1.0MF 20% 50V			C 735	QCC11EM-104V	C-CAPACITOR	.10MF 20% 25V	
	C 219	QET41HM-474	E-CAPACITOR	.47MF 20% 50V			C 737	QCB81HK-151Y	C-CAPACITOR	150PF 10% 50V	
	C 220	QET41AM-107	E-CAPACITOR	100MF 20% 10V			C 738	QCY41HK-102	C-CAPACITOR	1000PF 10% 50V	
	C 221	QCB81HK-331Y	C-CAPACITOR	330PF 10% 50V			C 739	QCB81HK-151Y	C-CAPACITOR	150PF 10% 50V	
	C 222	QET41AM-107	E-CAPACITOR	100MF 20% 10V			C 831	QET41AM-107	E-CAPACITOR	100MF 20% 10V	
	C 223	QET41AM-108	E-CAPACITOR	100MF 20% 10V			C 837	QET41AM-107	E-CAPACITOR	100MF 20% 10V	
	C 224	QFV41HJ-104ZM	FILM CAPACITOR	.10MF 5% 50V			C 838	QET41AM-107	E-CAPACITOR	100MF 20% 10V	
	C 225	QER41EM-475VM	E-CAPACITOR	4.7MF 20% 25V			C 901	QCC11EM-223V	C-CAPACITOR	.022MF 20% 25V	
	C 230	QCS11HJ-221	C-CAPACITOR	220PF 5% 50V			C 902	QCC11EM-223V	C-CAPACITOR	.022MF 20% 25V	
	C 255	QCB81HK-181Y	E-CAPACITOR	180PF 10% 50V			C 903	QCC11EM-223V	C-CAPACITOR	.022MF 20% 25V	
	C 301	QET41CM-106	E-CAPACITOR	10MF 20% 16V			C 904	QCC11EM-223V	C-CAPACITOR	.022MF 20% 25V	
	C 302	QET41AM-476	E-CAPACITOR	47MF 20% 10V			C 905	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 303	QCS11HJ-151	E-CAPACITOR	150PF 5% 50V			C 906	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 304	QET41AM-476	E-CAPACITOR	47MF 20% 10V			C 908	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 305	QET41CM-226	E-CAPACITOR	22MF 20% 16V			C 909	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 306	QET41CM-336	E-CAPACITOR	33MF 20% 16V			C 910	QET41AM-227	E-CAPACITOR	220MF 20% 10V	
	C 308	QCS11HJ-181	C-CAPACITOR	180PF 5% 50V			C 911	QET41CM-226	E-CAPACITOR	22MF 20% 16V	
	C 309	QFN41HJ-182	M-CAPACITOR	1800PF 5% 50V			C 912	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 310	QFN41HJ-182	M-CAPACITOR	1800PF 5% 50V			C 913	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
	C 312	QFN41HJ-682	M-CAPACITOR	6800PF 5% 50V			C 914	QET41AM-227	E-CAPACITOR	220MF 20% 10V	
	C 313	QET41AM-476	E-CAPACITOR	47MF 20% 10V			C 915	QET41AM-107	E-CAPACITOR	100MF 20% 10V	
	C 315	QFN41HJ-472	M-CAPACITOR	4700PF 5% 50V			CN301	TXLP-004-B	CONNECTOR	A HEAD	
	C 318	QETB1CM-338M	E-CAPACITOR	3300MF 20% 16V			CN302	TXLP-003-B	CONNECTOR	B HEAD	
	C 319	QET41CM-106	E-CAPACITOR	10MF 20% 16V			CN303	TTL25L-005	CONNECTOR	CD	
	C 320	QET41CM-227	E-CAPACITOR	220MF 20% 16V			CN305	TXLP-009-B	CONNECTOR	DOUBLE C MECHA	
	C 322	QCB81HK-102Y	E-CAPACITOR	1000PF 10% 50V			CN306	TTL25L-003	CONNECTOR	MAIN	
	C 350	QETC1HM-225ZM	E-CAPACITOR	2.2MF 20% 50V			CN307	5268-03A	CONNECTOR	BATTERY CONECTO	
	C 352	QET41AM-476	E-CAPACITOR	47MF 20% 10V			CN309	TXLL-004-M	CONNECTOR	SPEAKER	
	C 381	QET41AM-107	E-CAPACITOR	100MF 20% 10V			CN310	VMC0289-P06	CONNECTOR	PWB CN	
	C 399	QET41CM-336	E-CAPACITOR	33MF 20% 16V			CN701	TXLP-005-B	CONNECTOR	CD	
	C 701	QET41AM-227	E-CAPACITOR	220MF 20% 10V			CN702	TXLP-004-B	CONNECTOR	CD	

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
REF.703	TXLP-006-B	CONNECTOR	CD TRAY	
CN704	TXLP-008-B	CONNECTOR	SWITCH PCB	
CP101	QEK61EM-335ZM	E-CAPACITOR	3.3MF 20% 25V	
CP102	QCS11HJ-151	C-CAPACITOR	150PF 5% 50V	
CP103	QCB11HK-821Y	C-CAPACITOR	820PF 10% 50V	
CP104	QET41AM-476	E-CAPACITOR	47MF 20% 10V	
CP105	QFM81HJ-103	M-CAPACITOR	-010MF 5% 50V	
CP106	QETC1HM-334ZN	E-CAPACITOR	.33MF 20% 50V	
CP201	QEK61EM-335ZM	E-CAPACITOR	3.3MF 20% 25V	
CP202	QCS11HJ-151	C-CAPACITOR	150PF 5% 50V	
CP203	QCB11HK-821Y	C-CAPACITOR	820PF 10% 50V	
CP204	QET41AM-476	E-CAPACITOR	47MF 20% 10V	
CP205	QFM81HJ-103	M-CAPACITOR	-010MF 5% 50V	
CP206	QETC1HM-334ZN	E-CAPACITOR	.33MF 20% 50V	
CP301	QET41AM-107	E-CAPACITOR	100MF 20% 10V	
CS301	QCB11HK-681Y	E-CAPACITOR	680PF 10% 50V	
CS302	QET41AM-476	E-CAPACITOR	47MF 20% 10V	
D 302	1SS133	SI DIODE		
D 303	1SS133	SI DIODE		
D 701	1SS133	SI DIODE		
D 702	MT75-1JAT-77	ZENER DIODE		
D 703	1SS133	SI DIODE		
D 711	1SS133	SI DIODE		
D 901	IN5391	DIODE		
D 902	IN5391	DIODE		
D 903	IN5391	DIODE		
D 904	IN5391	DIODE		
D 905	1SS133	SI DIODE		
D 906	1SS133	SI DIODE		
D 907	1SS133	SI DIODE		
D 908	1SS133	SI DIODE		
D 909	1SS133	SI DIODE		
D 910	1SS133	SI DIODE		
D 911	1SS133	SI DIODE		
D 912	1N4001	DIODE		
D 913	1SS133	SI DIODE		
D 995	1SS133	SI DIODE		
D1701	VGL1185-001	LCD		
IC331	GP1U281Y	REMOCON SENSOR		
IC301	TA2068N	IC	PBAMP	
IC302	LA4597K	IC		
IC303	UPC1228HA	IC		
IC381	BA10358N	IC		
IC701	UPD75356GC-171H	IC	EVR BUFF IC(C=N2	
IC802	BA208A	IC		
J 1	HSJ2000-01-010	HEADPHONE JACK		
J 9	QMC0263-004BS	AC SOCKET		
K 701	VQZ0048-009	INDUCTOR		
K 702	VQZ0048-009	INDUCTOR		
L 301	VQP0028-330Z	INDUCTOR	L301=B99 MOTOR	
L 701	3A839N	INDUCTOR		
L 703	3A839N	INDUCTOR		
L 704	3A839N	INDUCTOR		
L 705	VQP0018-100	INDUCTOR		
L 706	VQP0018-100	INDUCTOR		

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
L 805	3A839N	INDUCTOR		
L 806	3A839N	INDUCTOR		
Q 102	2SC2001(L,K)	TRANSISTOR		
Q 202	2SC2001(L,K)	TRANSISTOR		
Q 301	DTC123ESTP	TRANSISTOR		
Q 302	2SA1015(V,GR)	TRANSISTOR		
Q 303	2SC2458(V,GR)	TRANSISTOR		
Q 304	2SA1015(V,GR)	TRANSISTOR		
Q 305	DTC123ESTP	TRANSISTOR		
Q 306	8550C	TRANSISTOR		
Q 701	2SC1923	TRANSISTOR		
Q 702	2SC1923	TRANSISTOR		
Q 703	2SA1015(V,GR)	TRANSISTOR		
Q 704	2SC2458(V,GR)	TRANSISTOR		
Q 705	DTC114TSTP	TRANSISTOR		
Q 901	2SB772(Q,P)	TRANSISTOR		
Q 902	2SC2458(V,GR)	TRANSISTOR		
Q 903	8550C	TRANSISTOR		
Q 904	2SC2458(V,GR)	TRANSISTOR		
Q 906	8550C	TRANSISTOR		
Q 907	2SC2458(V,GR)	TRANSISTOR		
Q 908	2SB772(Q,P)	TRANSISTOR		
Q 909	2SC2458(V,GR)	TRANSISTOR		
Q 911	2SC2458(V,GR)	TRANSISTOR		
R 104	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 105	QRD161J-153	CARBON RESISTOR	15K 5% 1/6W	
R 106	QRD161J-823	CARBON RESISTOR	82K 5% 1/6W	
R 107	QRD161J-820	CARBON RESISTOR	82K 5% 1/6W	
R 108	QRD161J-153	CARBON RESISTOR	15K 5% 1/6W	
R 121	QRD161J-820	CARBON RESISTOR	82K 5% 1/6W	
R 122	QRD161J-2R2	CARBON RESISTOR	2.2 5% 1/6W	
R 123	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R 124	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 204	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 205	QRD161J-153	CARBON RESISTOR	15K 5% 1/6W	
R 206	QRD161J-823	CARBON RESISTOR	82K 5% 1/6W	
R 207	QRD161J-820	CARBON RESISTOR	82K 5% 1/6W	
R 208	QRD161J-153	CARBON RESISTOR	15K 5% 1/6W	
R 221	QRD161J-820	CARBON RESISTOR	82K 5% 1/6W	
R 222	QRD161J-2R2	CARBON RESISTOR	2.2 5% 1/6W	
R 223	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R 224	QRD167J-332	CARBON RESISTOR	3.3K 5% 1/6W	
R 301	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	
R 303	QRD161J-475	CARBON RESISTOR	4.7M 5% 1/6W	
R 304	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 310	QRD161J-123	CARBON RESISTOR	12K 5% 1/6W	
R 311	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R 312	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R 313	QRD161J-120	CARBON RESISTOR	12 5% 1/6W	
R 317	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 318	QRD161J-101	CARBON RESISTOR	100 5% 1/6W	
R 320	QRD167J-562	CARBON RESISTOR	5.6K 5% 1/6W	
R 321	QRD167J-562	CARBON RESISTOR	5.6K 5% 1/6W	
R 323	QRD161J-102	CARBON RESISTOR	1.0K 5% 1/6W	
R 324	QRD161J-103	CARBON RESISTOR	10K 5% 1/6W	

9. Exploded View of Enclosure Assembly

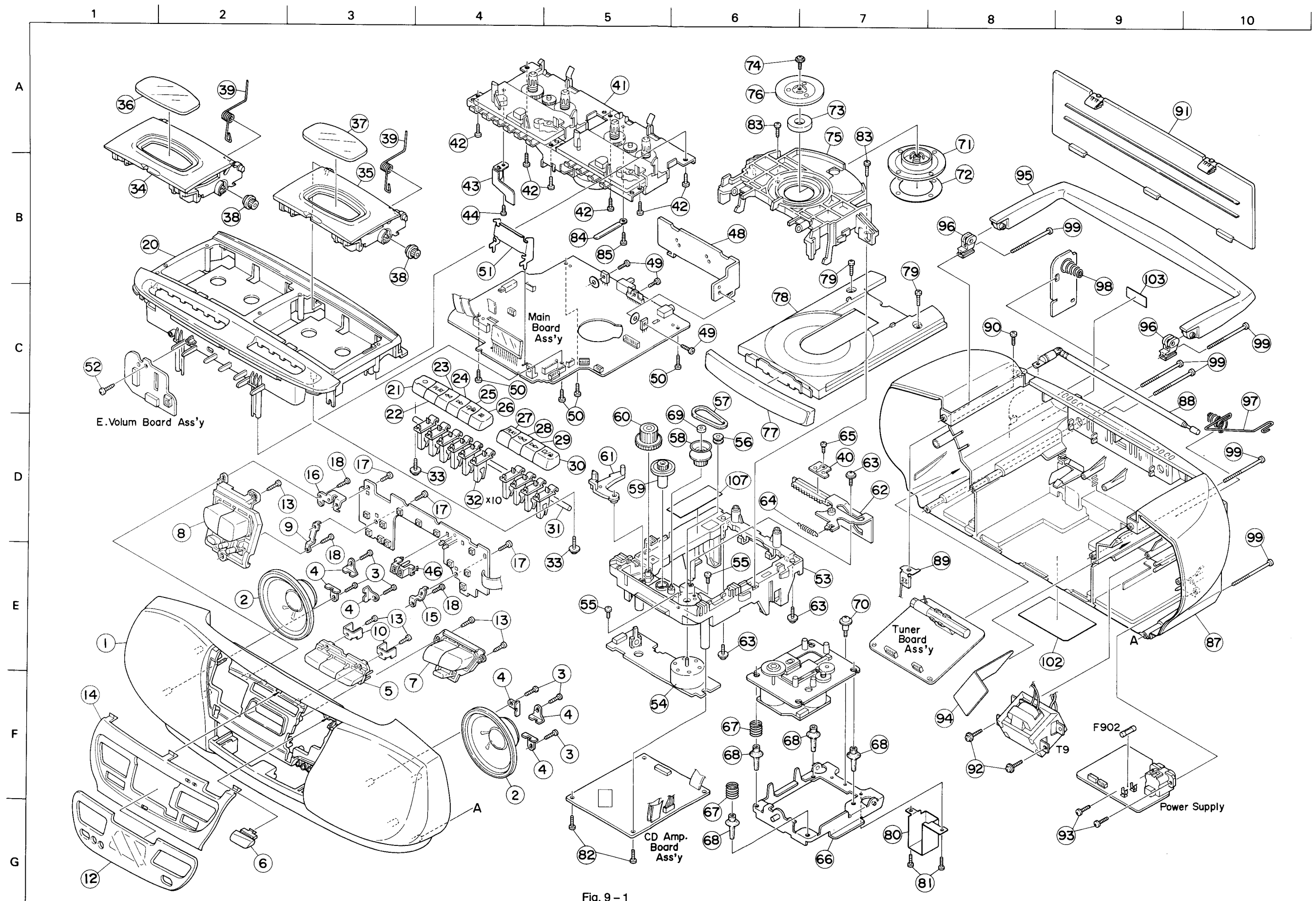


Fig. 9 - 1

● Enclosure component parts list

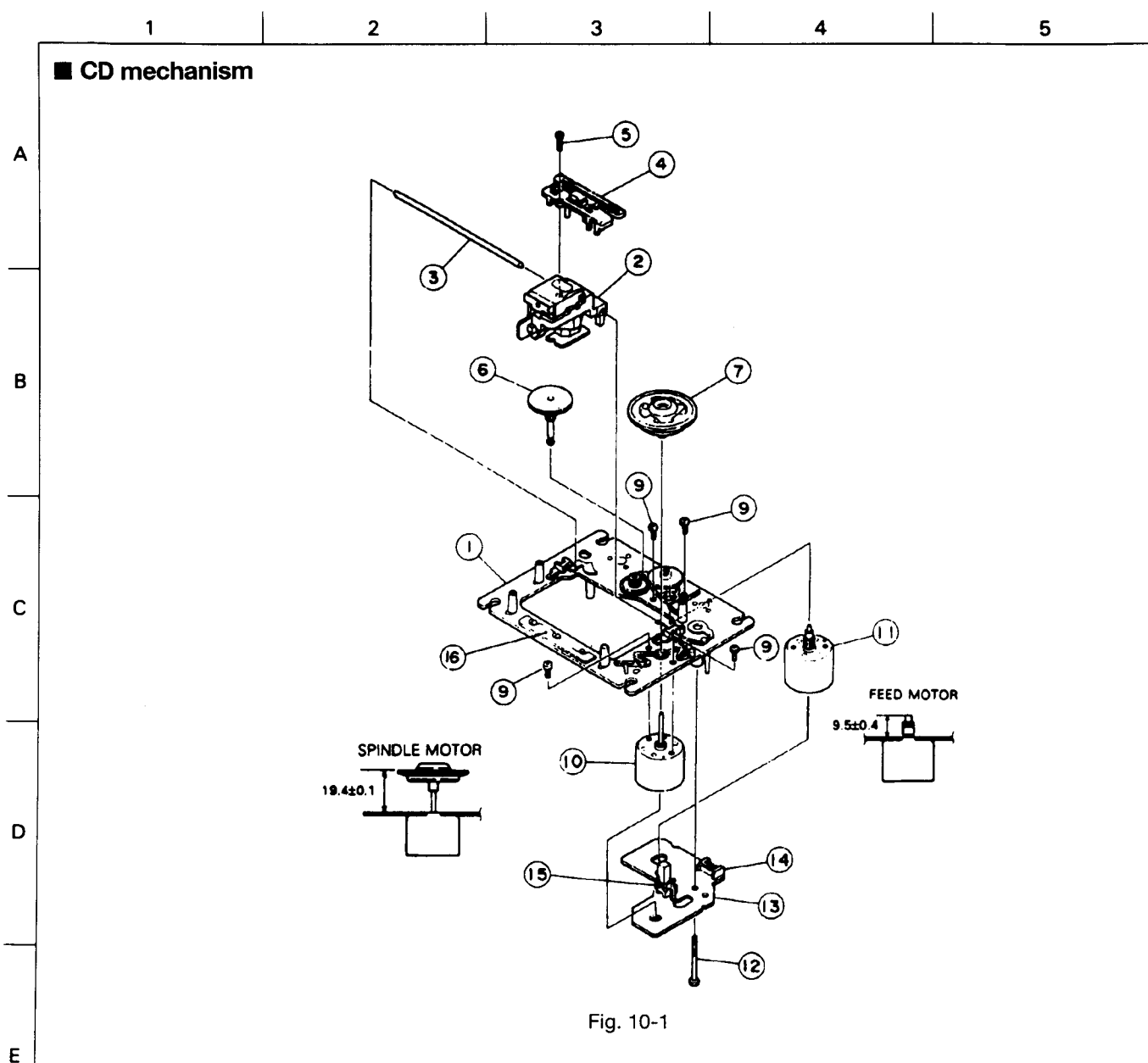
BLOCK NO. M1MM

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	VJG1373-00A	FRONT C.ASS'Y		1		
	2	VGS1001-034	SPEAKER		2		
	3	SBSF3008Z	SCREW	FOR SPEAKER	6		
	4	VYH8087-001	SPEAKER CLAMP		6		
	5	VXP3740-001	CD SEARCH BUTTO		1		
	6	VXP3743-001	POWER BUTTON	40010-205-00-01	1		
	7	VXP2118-001	FUNCTION BUTTON		1		
	8	VXP2117-001	VOLUME BUTTON	+/- KNOB	1		
	9	VKL7824-002	SW PWB BKT(D)		1		
	10	VKL7836-001	SW PCB SUPP.BKT		2		
	12	VJK2204-001	LCD LENS		1		
	13	SBSF2608Z	SCREW	FOR BUTTON	5		
	14	VJD2463-001	FRONT COVER(B)		1		
	15	VKL7817-001	SW PWB BKT(A)	50010-131-00-01	1		
	16	VKL7823-002	SW PWB BKT(C)		1		
	17	SDSP3004Z	SCREW	FOR SW PWB + BK	3		
	18	SBSF2608Z	SCREW	FOR SW BKT+F.CA	3		
	20	VJD1204-003	TOP COVER	40010-451-03-01	1		
	21	VXP2112-001	MECH BUTTON	40010-207-00-01	1		
	22	VXP2112-002	MECH BUTTON	40010-208-00-01	1		
	23	VXP2112-003	MECH BUTTON	40010-209-00-01	1		
	24	VXP2112-004	MECH BUTTON	40010-210-00-01	1		
	25	VXP2112-005	MECH BUTTON	40010-211-00-01	1		
	26	VXP2112-006	MECH BUTTON	40010-212-00-01	1		
	27	VXP2112-007	MECH BUTTON	40010-213-00-01	1		
	28	VXP2112-008	MECH BUTTON	40010-214-00-01	1		
	29	VXP2112-009	MECH BUTTON	40010-215-00-01	1		
	30	VXP2112-010	MECH BUTTON	40010-216-00-01	1		
	31	VYH7877-001	SHAFT	71200-010-01-00	1		
	32	VYH8006-001	BUTTON LEVER	40010-652-00-01	10		
	33	E65923-003	TAPPING SCREW		2		
	34	VJT2361-001	CASSETTE DOOR(L	40010-301-00-01	1		
	35	VJT2362-001	CASSETTE DOOR(R	40010-302-00-01	1		
	36	VJT3378-005	DOOR LENS(L)	40010-341-03-01	1		
	37	VJT3378-006	DOOR LENS(R)	40010-342-03-01	1		
	38	VYH8007-001	GEAR	40010-604-00-01	2		
	39	VKW5213-002	DOOR SPRING(L)		2		
	40	VE406291-001	PLATE	FOR CAM	1		
	41	-----	CASSETTE MECHA.		1		
	42	SBSF3010Z	SCREW	FOR CASS.MECHA	6		
	43	VKY4718-001	REC SPRING	71100-043-01-01	1		
	44	SDST2003Z	SCREW	FOR REC SPRING	1		
	46	VKS5543-001	LED HOLDER	40010-501-00-01	1		
	48	VYH3900-002	HEAT SINK	78000-007-02-00	1		
	49	SDSP3008Z	SCREW		3		
	50	SBSF3010Z	SCREW	MAIN+TOP COVER	4		
	51	VKL7813-001	LCD HOLDER	50010-136-00-01	1		
	52	SBSF3010Z	SCREW	E.VOL.PWB+T.COV	1		
	53	VYH1255-001	LOADING BASE	40010-506-00-01	1		
	54	RF-500TB-12560	MOTOR		1		
	55	SPSK2640Z	MINI SCREW		2		
	56	VE75984-001	MOTOR PULLEY	40010-681-00-01	1		
	57	VE75950-002	BELT	77100-003-01-00	1		
	58	VE75985-001	GEAR(1)	40010-601-00-01	1		

BLOCK NO. M1MM

A	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	59	VE75986-002	GEAR(2)	40010-602-00-01	1		
	60	VE75987-001	GEAR(3)	40010-603-00-01	1		
	61	VE307162-001	LEVER	40010-651-00-01	1		
	62	VE307160-001	CAM	40010-653-00-01	1		
	63	E65923-003	TAPPING SCREW		3		
	64	VYH7787-001	SPRING	71100-049-01-01	1		
	65	SBSF3008Z	SCREW		1		
	66	VE307179-002	E.BASE ASS'Y	50010-134-00-01	1		
	67	E406871-001	SPRING	71100-047-01-01	2		
	68	VE406294-002	INSULATOR	76402-002-01-01	4		
	69	VE60912-001	SPEED NUT	40010-441-00-01	1		
	70	E406293-001	SPECIAL SCREW		1		
	71	VYH3901-001	CLAMPER	40010-505-00-01	1		
	72	VYH7315-005	PAD	76300-014-02-02	1		
	73	VYH7313-004	MAGNET		1		
	74	GBSF2606Z	SCREW	FOR CLAMPER	1		
	75	VYH2314-001	CLAMPER BASE	40010-508-00-01	1		
	76	VYH3764-001	CLAMPER PLATE	50010-101-00-01	1		
	77	VJD2462-005	CD FITTING		1		
	78	VYH1256-001	TRAY	40010-104-00-01	1		
	79	SBSF3008Z	SCREW	FOR TRAY STOPPE	2		
	80	VMA4660-001	SHIELD CASE	50010-135-00-01	1		
	81	SDSR2606Z	SCREW	SHIELD CASE+CD	2		
	82	SBSF3008Z	SCREW		2		
	83	SBSF3008Z	SCREW	CLAMPER BASE+L.	2		
	84	C1-PARTS808292	WIRE CLAMP		1		
	85	SDST3006Z	SCREW		1		
	87	VJG1374-001	REAR CABINET	40010-102-00-01	1		
	88	215-021704-00	ANT. ROD	77001-002-01-02	1		
	89	VKL7814-001	TERMINAL LUG	50010-103-00-01	1		
	90	SDSP3012N	SCREW	FOR ROD ANT.	1		
	91	VJC2554-001	BATTERY COVER	40010-452-00-01	1		
	92	GBSF3016Z	SCREW	FOR TRANS	2		
	93	SBSF3010Z	SCREW	FOR AC	2		
	94	VYH8055-001	SHIELD PLATE		1		
	95	VJH2015-001	HANDLE	40010-391-00-01	1		
	96	VYH8008-001	HANDLE SUPPORTE	40010-503-00-01	2		
	97	VKW5212-001	BATTERY SPRING	71100-050-01-01	1		
	98	207-0Q3305-00	BATTERY SPRING	71100-048-01-01	1		
	99	SBSF3040Z	SCREW	FRONT+REAR	6		
	102	VYN5197-002	NAME PLATE	77200-249-01-01	1	B	
		VYN5197-005	NAME PLATE		1	E, EN	
		VYN5197-008	NAME PLATE		1	G	
	103	E70891-001	CLASS 1 LABEL		1		
	107	E406709-001	LASER CAUTION		1		
F	902	QMF51E2-2R5J1	FUSE	2.5A	1		
T	9	33657-021-01-06	POWER TRANS	V-2409T-B	1		

10. Exploded View of Mechanism Assembly



● CD mechanism parts list

BLOCK NO. M3MM

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	EPB-002A	MECHA.BASE ASSY		1		
	2	OPTIMA-6S	PICKUP ASS'Y		1		
	3	E406777-001	GAIDE SHAFT		1		
	4	E307746-001	CD RACK		1		
	5	SDSF2006Z	SCREW	CD LACK ASS'Y	1		
	6	EPB-003A	MECHA GIAR		1		
	7	E75807-301	CD T.TABLE ASSY		1		
	9	SDSP2003N	SCREW	FOR MOTOR	4		
	10	E406783-001	SP MOTOR	SPINDL MOTOR	1		
	11	E406784-001SA	MOTOR ASS'Y	FEED MOTOR	1		
	12	E75832-001	S.SCREW	M.REAF SWITCH	1		
	13	EMW10190-001	P.C.BOARD	LEAF SWITCH	1		
	14	EMV5109-006B	6P PLUG ASSY		1		
	15	ESB1100-005	LEAF SWITCH		1		
	16	E407212-001	DAMPER		1		

■ Cassette mechanism assembly

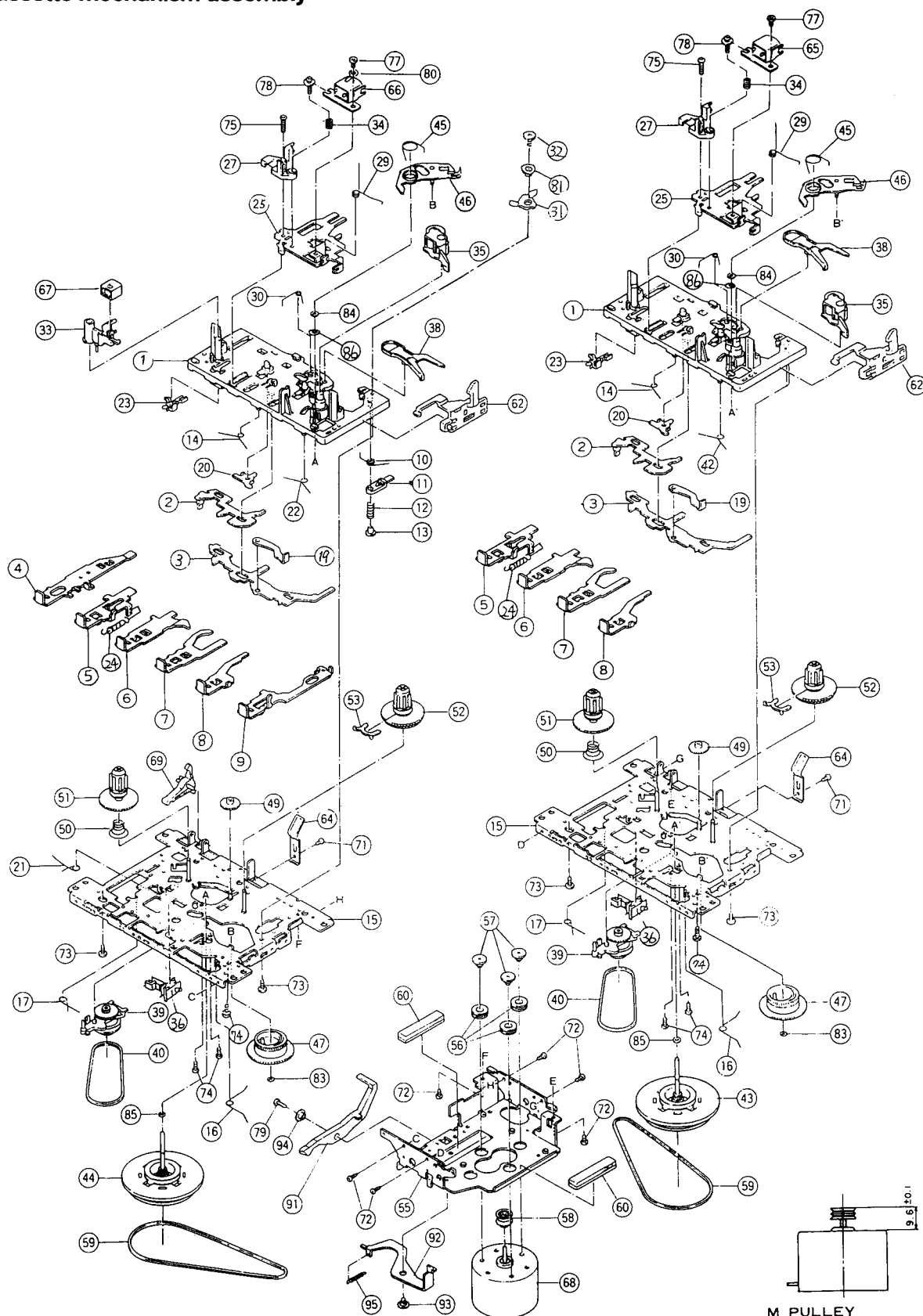


Fig. 10-2

● Cassette mechanism component parts list

BLOCK NO. M3MM 1 1 1

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	192114301ZT	BASE ASS'Y		2		
	2	19211409T	SWITCH ACTUATOR		2		
	3	19211408T	LOCK CAM		2		
	4	19211422T	BUTTON LEVER	REC	1		
	5	19211484T	BUTTON LEVER	PLAY	2		
	6	19211424T	BUTTON LEVER	REW	2		
	7	19211425T	BUTTON LEVER		2		
	8	19211426T	BUTTON LEVER	STOP	2		
	9	19211461T	BUTTON LEVER	PAUSE	1		
	10	19211413T	P CONT. SPRING	P CONTROL	1		
	11	19211482T	PAUSE LEVER		1		
	12	19211412T	SPRING	PAUSE LEVER	1		
	13	19211411T	PAUSE STOPPER		1		
	14	19211414T	TORSION SPRING	BUTTON LEVER	2		
	15	192101501ZT	CHASSIS ASS'Y		2		
	16	19211416T	TORSION SPRING	ACTUATOR SPRING	2		
	17	19211417T	TORSION SPRING	LEVER SPRING	2		
	19	182101159T	E.KICK LEVER		2		
	20	19211420T	STOPPER		2		
	21	19211421T	TORSION SPRING	REC BUTTON	1		
	22	19211415T	TORSION SPRING	BUTTON LEVER	1		
	23	MSW-1541T	LEAF SWITCH	MSW-1541T	2		
	24	18210150T	PLAY BUTTON LEV	PLAY BUTTON	2		
	25	19210311T	HEAD PANEL		2		
	27	19210304AT	HEAD BASE		2		
	29	19210309T	PANEL P SPRING		2		
	30	19211418AT	SPRING		2		
	31	19211434T	P.ROLLER ARM		1		
	32	99992041T	SPECIAL SCREW	M2 X 3	1		
	33	19210305T	MAGNET HEAD ARM		1		
	34	18210307T	AZIMUTH SPRING		2		
	35	192104309T	P.ROLL. ARM ASY	PINCH ROLLER	2		
	36	640101161T	LEAF SWITCH	MSW-17820MVDO	2		
	38	19212604TT	SENSING LEVER		2		
	39	192107308T	RF CLUTCH ASS'Y		2		
	40	18210711T	RF.BELT		2		
	42	19211433T	TORSION SPRING	BUTTON L.S.(C)	1		
	43	192109304ZT	FLYWHEEL ASS'Y		1		
	44	192109303ZT	FLYWHEEL ASS'Y		1		
	45	19212605T	TORSION SPRING	GEAR PLATE	2		
	46	192126502ZT	GEAR PLATE ASSY		2		
	47	19212602T	CAM GEAR		2		
	49	18211070T	F.FORWARD GEAR		2		
	50	18211099T	BACK TENSION SP	BACK TENSION	2		
	51	192105304T	S. REEL ASS'Y	SUPPLY	2		
	52	192105303T	T. REEL ASS'Y	TAKE UP	2		
	53	19210506T	SENSOR		2		
	55	19211211T	MOTOR BRACKET		1		
	56	18211266T	MOTOR RUBBER		3		
	57	18511418T	COLLAR SCREW		3		
	58	19211213T	MOTOR PULLEY		1		
	59	19210924T	MAIN BELT		2		
	60	19211212T	MAT		2		
	62	19211301T	EJ. SLIDE LEVER		2		

BLOCK NO. M3MM 111

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	64	18291001T	PACK SPRING		2		
	65	MS18R-AKON1	PB HEAD	B MECHA	1		
	66	MS15R-AA2N1	REC/PB HEAD	A MECHA	1		
	67	PH-K380-MS1-6A	E HEAD		1		
	68	60020222T	MOTOR	EG-530YD-9BH	1		
	69	18211069T	REC.SAF.LEVER		1		
	71	91790000T	TAPPING SCREW	M2 X 3	2		
	72	91800000T	SCREW	M2 X 4	6		
	73	96790000T	TAPPING SCREW	M2 X 5	4		
	74	99991809T	SPECIAL SCREW	M2 X 4.5	6		
	75	90040000T	SCREW(M2 X 6)	M2 X 6	2		
	77	91150000T	SCREW(M2 X 3)	M2 X 3	2		
	78	99220000T	SCREW(M2 X 7)	M2 X 7	2		
	79	9P0420061T	SCREW	M2 X 6	1		
	80	94800000T	LUG		1		
	81	19211437T	P ARM COLLAR		1		
	83	94220000T	P.WASHER	1.2X3.8X0.3	2		
	84	99990313T	POLY.CUT WASHER	1.45X3.8X0.5	2		
	85	97860000T	POLY WASHER	2X3.5X0.3	2		
	86	99990003T	POLYSLIDER WAS.	2.1X4X0.13	2		
	91	19211209T	P.KICK LEVER(B)		1		
	92	18211268T	P.KICK LEVER		1		
	93	18211223T	COLLAR SCREW		1		
	94	18211265T	COLLAR (B)	P KICK LEVER	1		
	95	18211225T	SPRING		1		

11. Illustration of Packing and Parts List

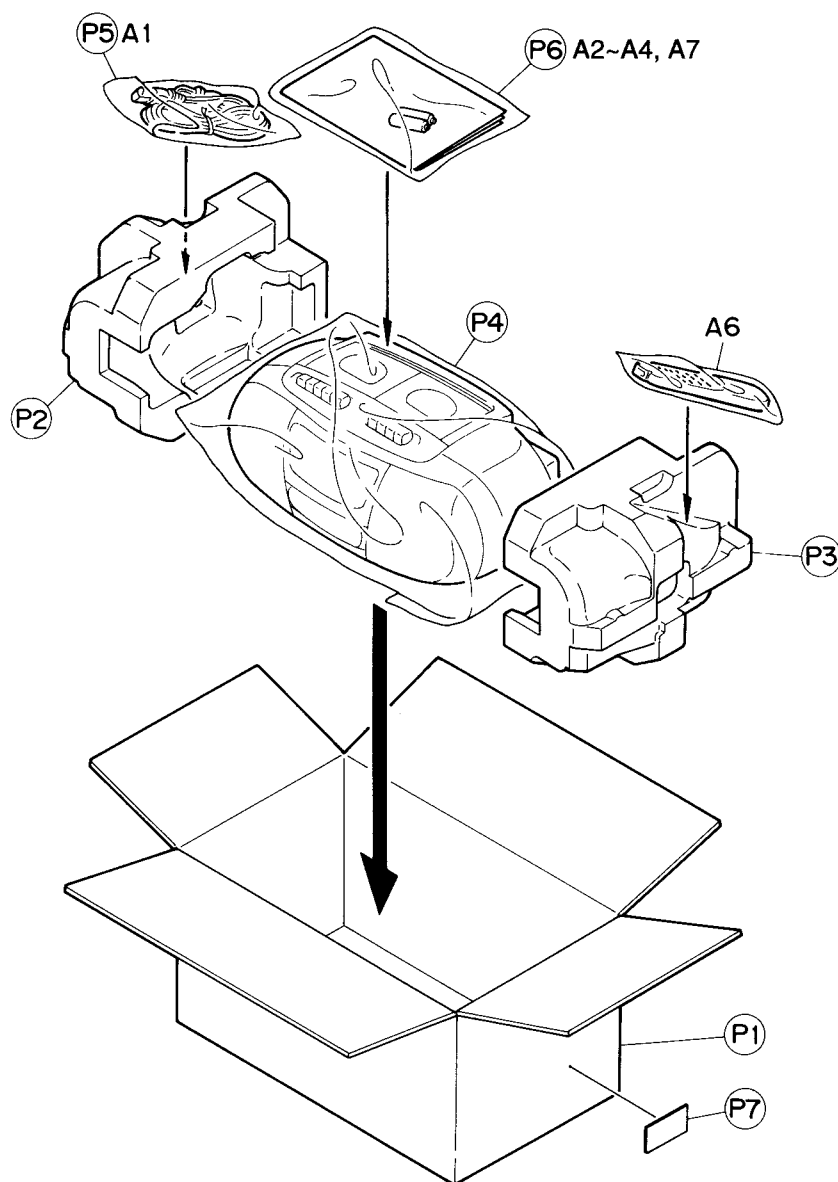


Fig. 11 - 1

● Packing parts list

BLOCK NO. **M4MM**

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
P	1	VPC5197-002	CARTON	50010-562-05-01	1		
P	2	VPH1678-001	CUSHION (L)	50010-601-00-01	1		
P	3	VPH1678-002	CUSHION (R)	50010-602-00-01	1		
P	4	VPE3020-028	POLY BAG	74038-643-03-01	1		
P	5	QPGA012-02505	POLY BAG	74009-233-04-00	1		
P	6	VPE3026-004	POLY BAG	74023-353-07-00	1		
P	7	-----	CARTON LABEL	77200-257-01-01	1		

Accessories

BLOCK NO. M4MM

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
△	A 1	QMP5520-183BS	POWER CORD	35041-183-21-14	1	B	
△	A 2	QMP39F0-183	POWER CORD		1	E,EN,G	
		VNN5197-251	INSTRUCTIONS		1	E	
		VNN5197-671	INSTRUCTIONS	77301-078-01-01	1	B	
		VNN5197-271	INSTRUCTIONS		1	EN	
	A 3	VNN5197-261	INSTRUCTIONS		1	E,EN,G	
	A 4	E43486-340B	SAFETY INST SHE		1	B	
		BT-20135	WARRANTY CARD		1	G	
		BT-20066A	WARRANTY CARD		1	B	
		BT-54003-1	WARRANTY CARD		1	B	
	A 6	VGR0050-001	RMOCON	RM-RXQW35	1		
	A 7	UM-3(DJ)-2PSA	BATTERY	FOR REMOCON	1		

JVC

VICTOR COMPANY OF JAPAN, LIMITED
AUDIO PRODUCTS DIVISION

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